Mathematics

TEACHERS' Manual

1 to 5

1. Spatial Relationship

Test Prep 1.1

Q. Tick the pictures where objects are inside and cross (✗) the pictures where objects are outside.

Sol.

1.

✗

2.

✔

3.

✔

4.

✗

Test Prep 1.2

Q. Tick (✔) the smaller:

Sol.

1.

✔

2.

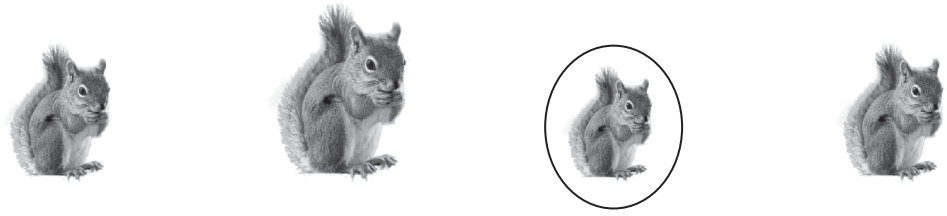
✔

Test Prep 1.3

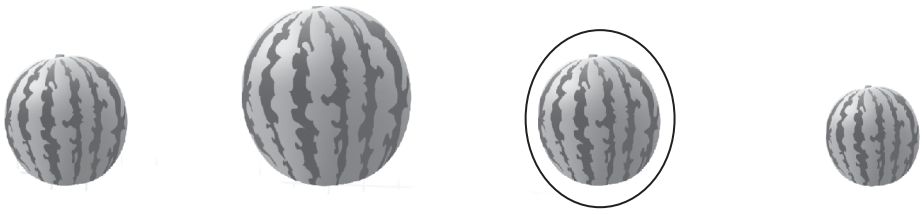
Q. By comparing with the objects on the left, encircle the objects that are of the same size:

Sol.

1.



2.



Test Prep 1.4

Q. Look at the pictures and fill in the blanks with the correct word (on/under):

Sol.

1.

(a) A bird is _on_ the tree.
(b) A boy is _under_ the tree.

2.

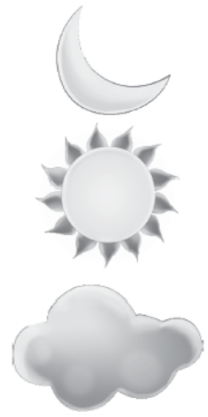
(a) Mother is _on_ the roof.
(b) Girl is _under_ the roof.

Test Prep 1.5

Q. Tick (✔) the correct object:

Sol.

1. What is above the Sun?



✔

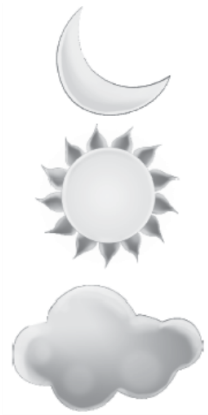
2. What is below the lizard?

✔

3. What is above the mango?

✔

4. What is below the sun?



✔

5. What is above the lizard?

✔

6. What is below the mango?

✔

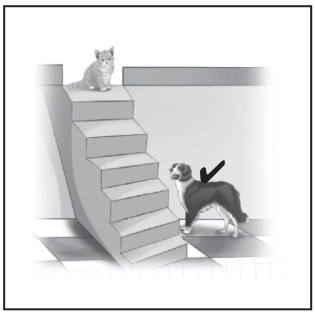
Test Prep 1.6

Q.1. Tick (✔) the pot on the top:

Sol.

Q.2. Tick (✔) the animal at the bottom of the stairs:

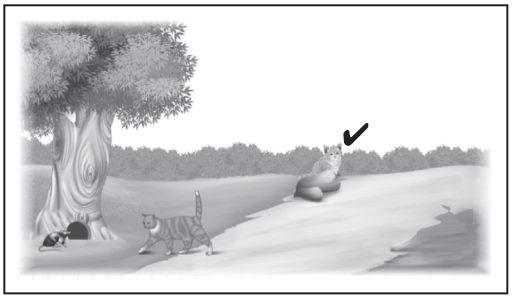
Sol.



Test Prep 1.7

Q. Tick (✔) the cat far from the tree:

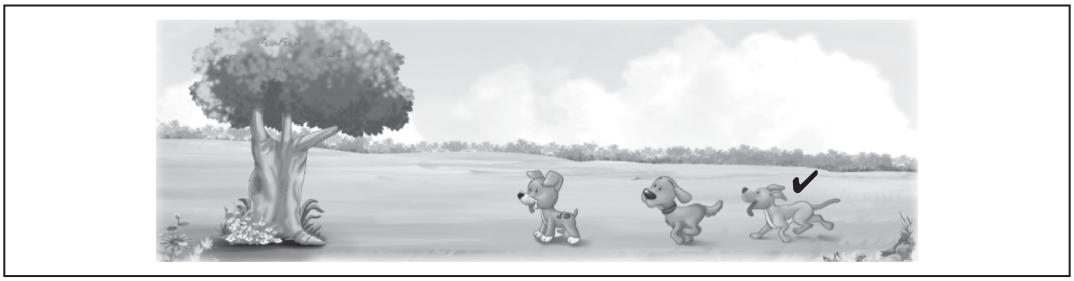
Sol.



Test Prep 1.8

Q.1. Tick (✔) the puppy farthest from the tree:

Sol.



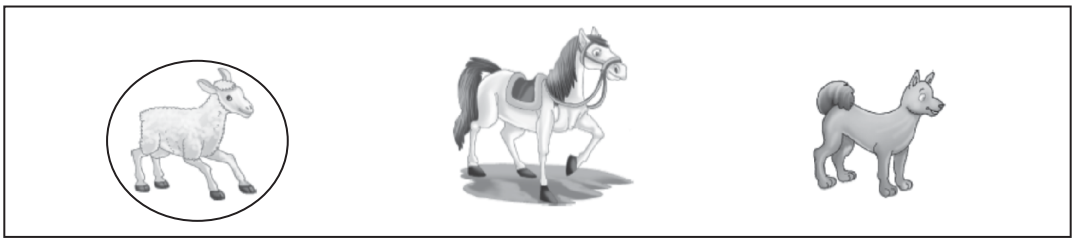
Q.2. Tick (✔) the tree nearest to the bird:

Sol.

Test Prep 1.9

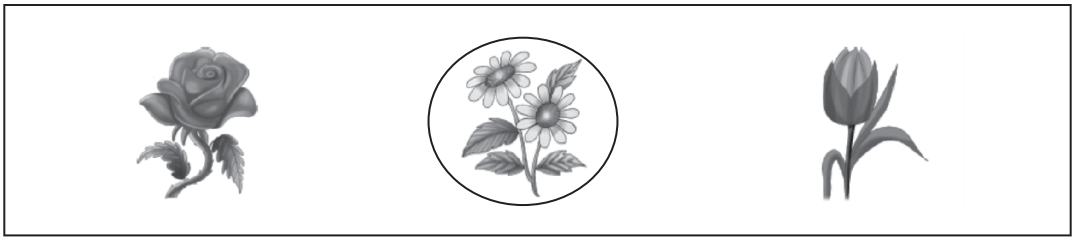
Q.1. Encircle the animal is before the horse:

Sol.



Q.2. Encircle the flower that is after the rose:

Sol.



Q.3. Encircle the object that is before the numbers:

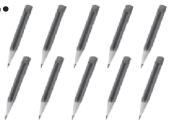
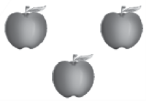
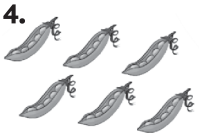
Sol.

2. Counting Numbers One to Ten

Test Prep 2.1

Q. Count the number of pictures and write in the placeholder.

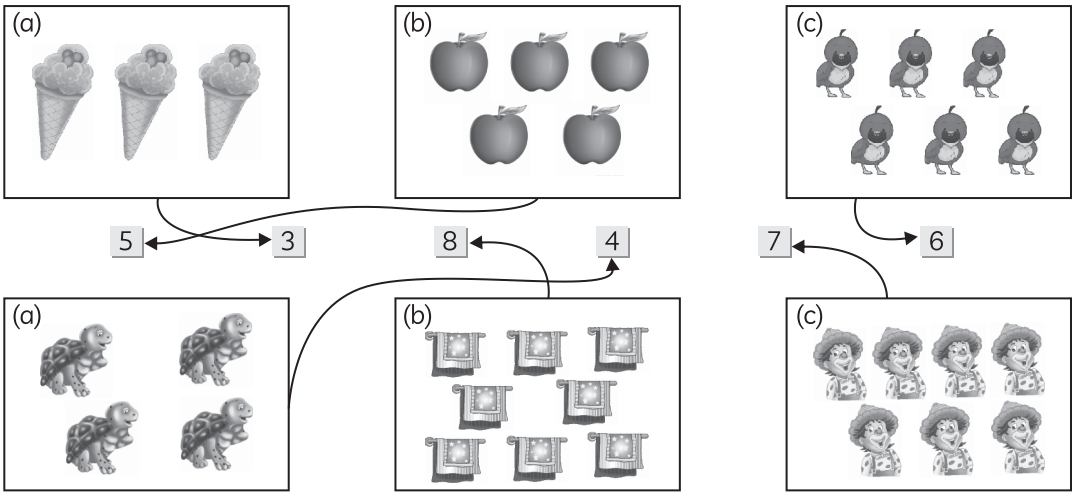
Sol.

1.  1	2.  10	3.  3	4.  6	5.  4
6.  9	7.  5	8.  7	9.  8	10.  2

Test Prep 2.2

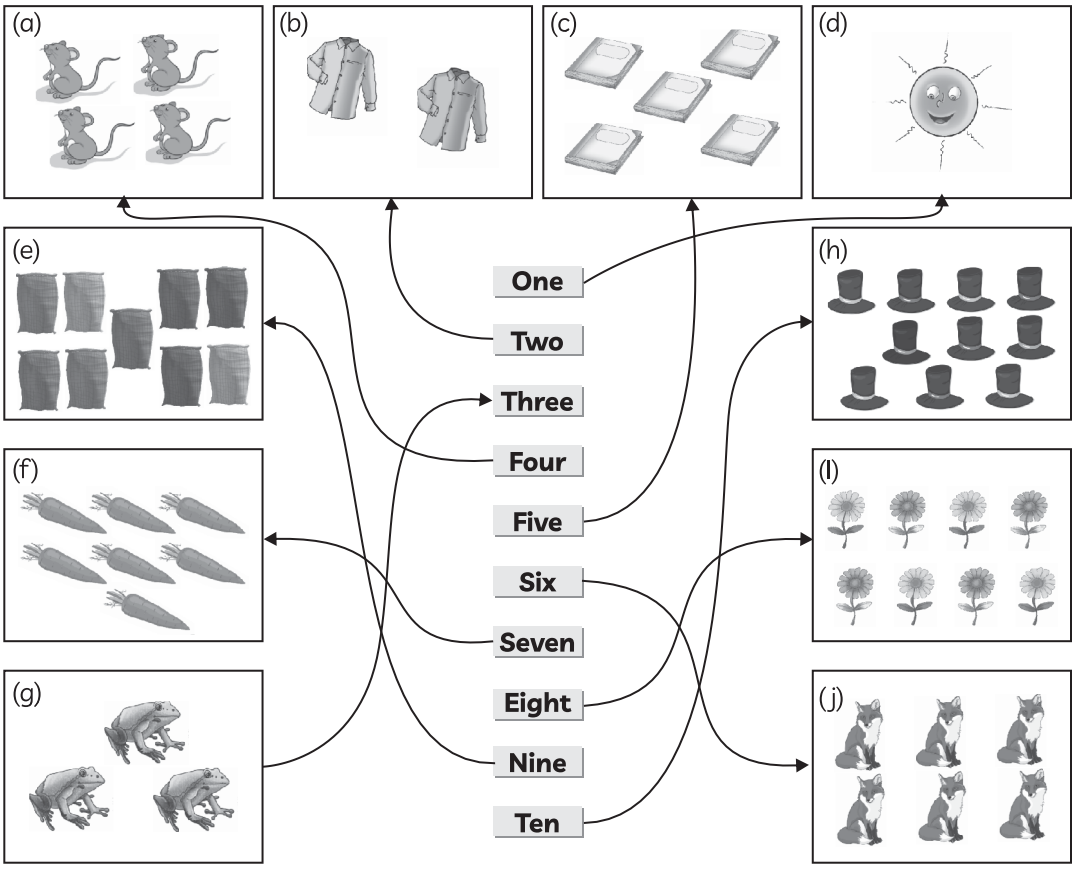
Q.1. Count the number of pictures and write in the placeholder:

Sol.



Q.2. Count the objects and match with the correct number name:

Sol.



Test Prep 2.3

Q.1. Write the numbers for the following:

Sol.
(a) Three → 3 (b) Two → 2 (c) Nine → 9
(d) Five → 5 (e) Eight → 8 (f) Six → 6
(g) Seven → 7 (h) One → 1 (i) Four → 4
(j) Ten → 10

Q.2. Write the number names for the following:

Sol.
(a) 9 → Nine (b) 1 → One (c) 8 → Eight
(d) 4 → Four (e) 7 → Seven (f) 5 → Five
(g) 6 → Six (h) 2 → Two (i) 3 → Three
(j) 10 → Ten

Test Prep 2.4

Q.1. Write the number that comes after:

Sol.
(a) 3 4
(b) 8 9
(c) 5 6
(d) 7 8

Q.2. Write the number that comes before:

Sol.
(a) 1 2
(b) 3 4
(c) 8 9
(d) 5 6

Q.3. Write the number that comes in between:

Sol.
(a) 6 7 8 (b) 3 4 5
(c) 5 6 7 (d) 7 8 9
(e) 1 2 3 (f) 4 5 6

Test Prep 2.5

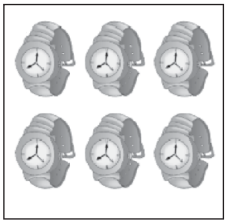
Q. Count and write. Also, put the correct sign >, < or = :

Sol.

1.

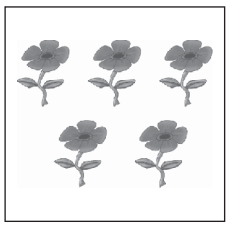
5 > 3

2.



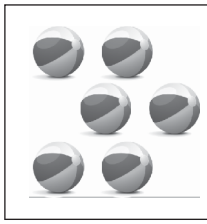
6 = 6

3.



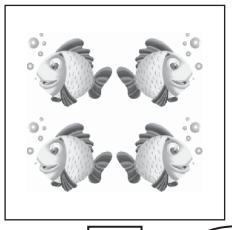
5 < 6

4.



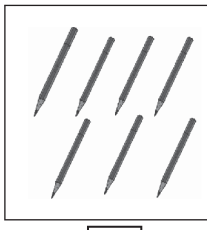
6 < 8

5.



4 < 5

6.



7 > 5

Test Prep 2.6

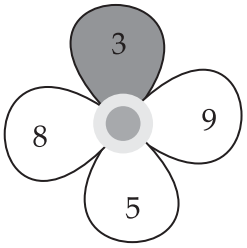
Q.1. Put the correct symbol >, < or = in the placeholder:

Sol.

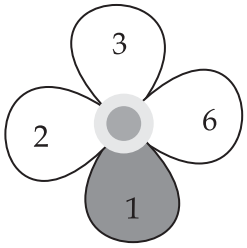
(a) 6 > 5	(b) 7 < 9	(c) 2 < 6
(d) 7 > 6	(e) 8 > 4	(f) 5 < 7
(g) 9 > 5	(h) 4 > 2	(i) 6 = 6

Q.2. Colour the petal with the smallest number in red:

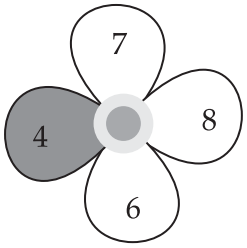
Sol. (a)



(b)

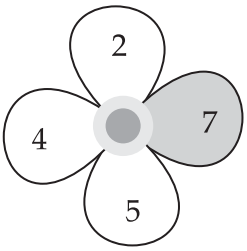


(c)

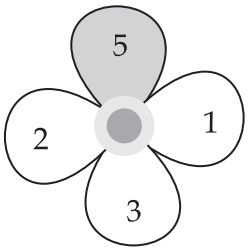


Q.3. Colour the petal with the biggest number in green:

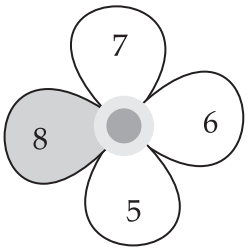
Sol. (a)



(b)



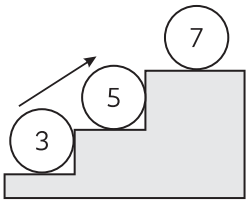
(c)



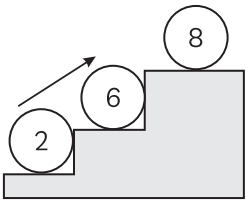
Test Prep 2.7

Q.1. Write these numbers from the smallest to the biggest:

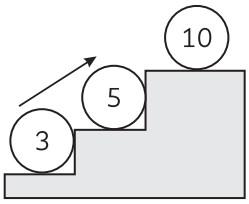
Sol. (a) 7 3 5



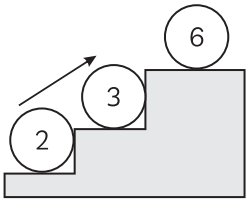
(b) 8 6 2



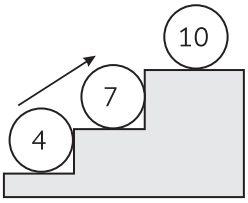
(c) 5 3 10



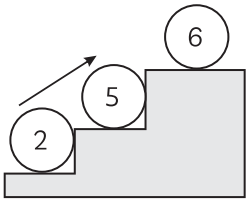
(d) 2 6 3



(e) 7 10 4



(f) 6 2 5



Q.2. Write these numbers form the smallest to the biggest:

Sol. (a) 1 7 5 3 8 — 1 3 5 7 8

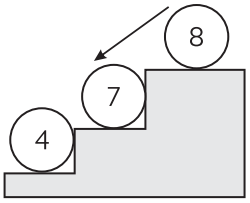
(a) 7 6 10 4 3 — 3 4 6 7 10

(a) 4 1 9 5 2 — 1 2 4 5 9

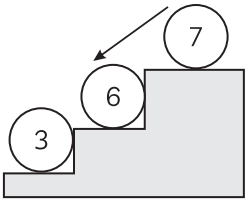
Test Prep 2.8

Q.1. Write these numbers starting from the biggest on the top to the smallest at the bottom:

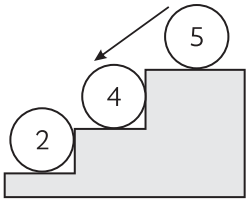
Sol. (a) 7 4 8



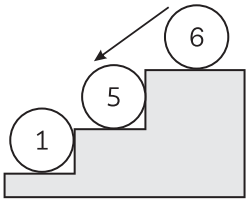
(b) 6 3 7



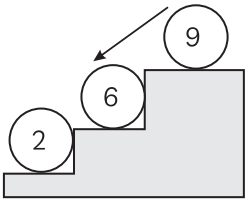
(c) 2 5 4



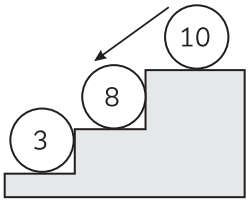
(d) 5 6 1



(e) 2 9 6



(f) 8 10 3



Q.2. Write these numbers starting from the biggest to the smallest:

Sol. (a) 9 6 5 7 10 → 10 9 7 6 5

(a) 3 2 8 4 6 → 8 6 4 3 2

(a) 7 5 2 10 9 → 10 9 7 5 2

3. Addition and Subtraction up to 10

Test Prep 3.1

Q. Count the number of objects and write their sum in the placeholder:

Sol.

1.  and  make 

4 and 5 make 9

2.  and  make 

1 and 5 make 6

3.  and  make 

3 and 5 make 8

4.  + 

6 and 2 make 8

6 + 2 = 8

5.  + 

4 and 5 make 9

4 + 5 = 9

6.  + 

3 and 3 make 6

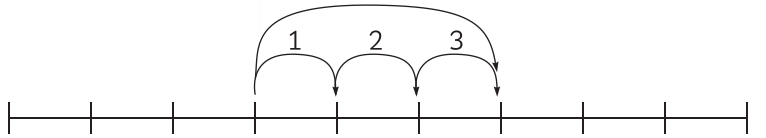
3 + 3 = 6

Test Prep 3.2

Q. Show the steps on the number line and write the answer in the box:

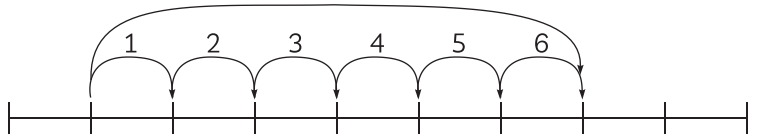
Sol.

1.



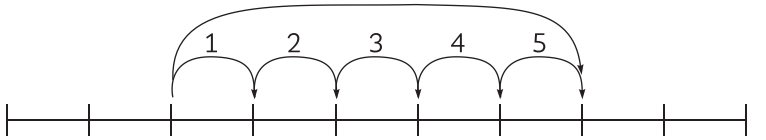
$4 + 3 =$ 7

2.



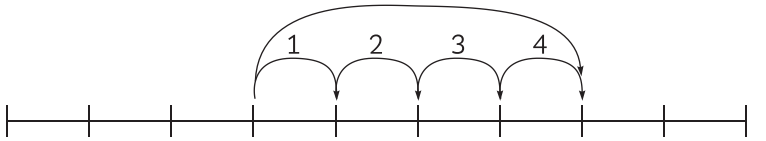
$2 + 6 =$ 8

3.



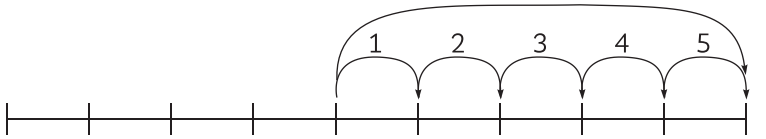
$3 + 5 =$ 8

4.



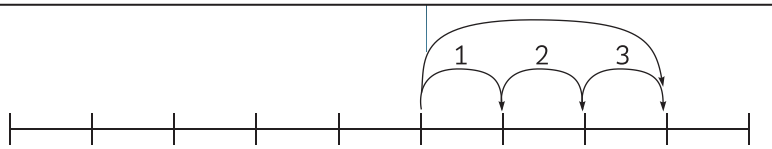
$4 + 4 =$ 8

5.



$5 + 5 =$ 10

6.



$6 + 3 =$ 9

Test Prep 3.3

Q. Add the following:

1. $1 + 0 =$ 1 **2.** $3 + 0 =$ 3 **3.** $5 + 0 =$ 5

4. $7 + 0 =$ 7 **5.** $0 + 2 =$ 2 **6.** $0 + 8 =$ 8

Test Prep 3.4

Q. Add the following:

1. $7 + 1 =$ 8 **2.** $5 + 1 =$ 6 **3.** $1 + 6 =$ 7

4. $4 + 5 = 5 +$ 4 **5.** $3 + 6 = 6 +$ 3 **6.** $5 +$ 3 $= 3 + 5$

Test Prep 3.5

Q. Add by drawing lines:

Sol.

1.

3	|||
+ 6	|||||
9	

2.

4	||||
+ 2	||
6	

3.

5	|||||
+ 4	||||
9	

4.

6	|||||
+ 4	||||
10	

5.

7	||||||
+ 3	|||
10	

6.

5	|||||
+ 5	|||||
10	

Test Prep 3.6

Q.1. Add and write:

Sol.

(a)  3 +  2 +  3 = 8

(b)  2 +  1 +  5 = 7

(c)  1 +  2 +  5 = 8

Q.2. Add:

Sol.

(a) 2 + 1 + 5 = 8

(b) 4 + 2 + 2 = 8

(c) 2 + 3 + 4 = 9

(d) 5 + 2 + 3 = 10

Q.3. Add:

Sol.

(a)

1	|
4	||||
+ 3	|||
8	

(b)

2	||
1	|
+ 6	||||||
9	

(c)

4	||||
2	||
+ 4	||||
10	

(d)

5	|||||
3	|||
+ 1	|
9	

Story Sums on Addition

Q. Read the story and find the sum. Picture will help you:

Sol. **1.**

3	
+ 2	
5	5 children are dancing.

2.

4	
+ 2	
6	There are 6 flowers.

3.

5	
+ 3	
8	There are 8 birds.

Q.4. I had 3 balloons. Ruby give me 3 more:

Sol. I got 6 balloons in all.

3 + 3 = 6

Q.5. There were 2 butterflies on one leaf and 3 on the other.

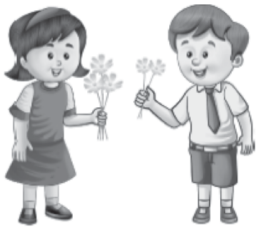
Sol. There are 2 + 3 = 5 butterflies in all.

Test Prep 3.7

Q.1.

Sol.

5 flower



2 gave to Sohail

3 are left.

Q.2.

Sol.

4 leaves | 2 take away | 2 are left.

Q.3.

Sol.

3 butterflies | 2 flew away | 1 are left.

Q.4.

Sol.

3 cows | 1 run away | 2 are left.

Test Prep 3.8

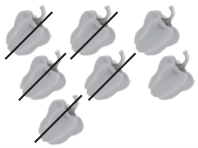
Q. Cross out to subtract and find the answer:

Sol.

1.

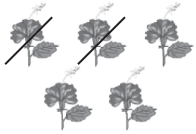
9 – 3 = 6

2.



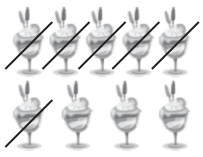
7 – 5 = 2

3.



5 – 2 = 3

4.

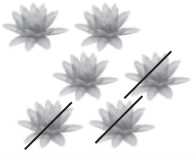


9 – 6 = 3

5.

4 – 2 = 2

6.



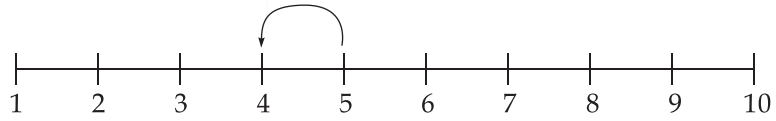
6 – 3 = 3

Test Prep 3.9

Q. Subtract the numbers on the number line:

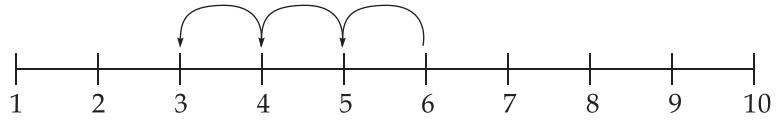
Sol.

1.



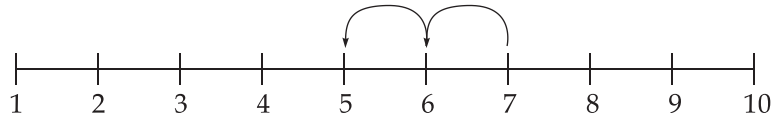
5 – 4 = 1

2.



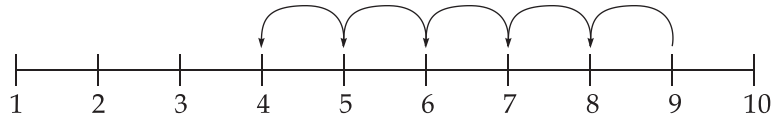
6 – 3 = 3

3.



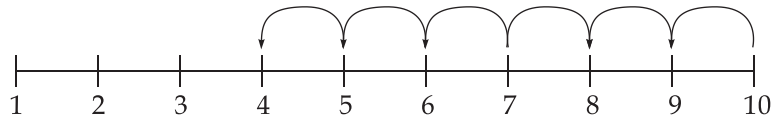
7 – 2 = 5

4.



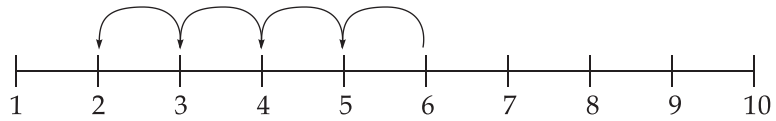
9 – 5 = 4

5.



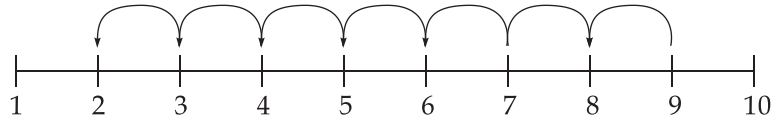
10 – 6 = 4

6.



6 – 4 = 2

7.



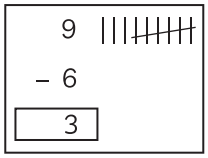
9 – 7 = 2

Test Prep 3.10

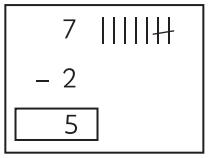
Q. Subtract by crossing out:

Sol.

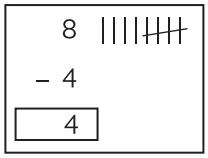
1.



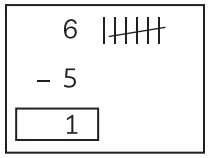
2.



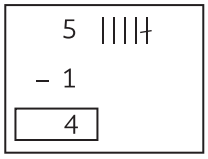
3.



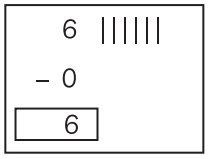
4.



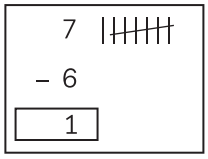
5.



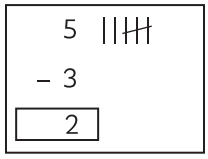
6.



7.



8.



9. 9 − 7 = 2 **10.** 8 − 2 = 6 **11.** 7 − 1 = 6 **12.** 9 − 5 = 4

Story Sums on Subtraction

Q. Read the story and find the difference. Pictures will help you:

Sol. **1.** 9 − 4 = 5 **2.** 6 − 2 = 4 **3.** 8 − 8 = 0 **4.** 5 − 2 = 3 **5.** 9 − 5 = 4

Maths Olympiad

Q. Tick (✔) the correct answer:

Sol. **1.** 4+5 is equal to 9.
~~(a) 6~~ ~~(b) 8~~ (c) 9 ✔

2. 8+0 = 8.
~~(a) 0~~ (b) 8 ✔ ~~(c) 7~~

3. 5+1+3 = 9.
~~(a) 6~~ ~~(b) 8~~ (c) 9 ✔

4. 6–0 gives 6.
~~(a) 0~~ ~~(b) 5~~ (c) 6 ✔

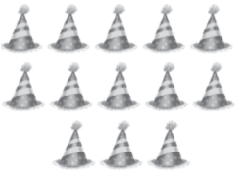
5. 9–8 = 1.
(a) 1 ✔ ~~(b) 4~~ ~~(c) 0~~

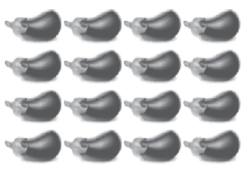
6. 7–7 is equal to = 0.
~~(a) 1~~ (b) 0 ✔ ~~(c) 7~~

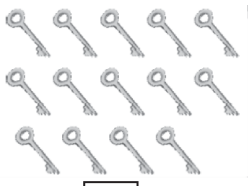
4. Counting Number 11 to 50

Test Prep 4.1

Q. Count the object and write the numbers in the placeholder:

Sol. **1.**  13

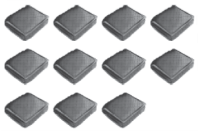
2.  16

3.  14

4.  12

5.  17

6.  15

7.  19	**8.**  18	**9.**  20	**10.**  11

Test Prep 4.2

Q. Read, speak and write the numbers and number names:

Sol.

1. 16 Sixteen	**2.** 19 Nineteen	**3.** 12 Twelve	**4.** 15 Fifteen
5. 17 Seventeen	**6.** 15 Fifteen	**7.** 20 Twenty	**8.** 19 Nineteen
9. 20 Twenty	**10.** 11 Eleven	**11.** 14 Fourteen	**12.** 18 Eighteen
13. 18 Eighteen	**14.** 11 Eleven	**15.** 16 Sixteen	**16.** 13 Thirteen
17. 14 Fourteen	**18.** 16 Sixteen	**19.** 17 Seventeen	**20.** 13 Thirteen

Test Prep 4.3

Q.1. Fill in the missing numbers:

Sol.

1	2	3	4	5	6	**7**	8	9	10
11	12	13	14	**15**	16	17	18	**19**	20
21	**22**	23	24	25	**26**	27	28	29	30
31	32	**33**	34	35	36	**37**	38	39	40
41	42	43	44	45	**46**	47	48	49	50

Q.2. Fill in the blanks:

Sol.

(a) 3 tens and 4 ones = 34

(b) 5 tens and 0 ones = 50

(c) 2 tens and 6 ones = 26

(d) 37 = 3 tens + 7 ones

(e) 28 = 2 tens + 8 ones

(f) 44 = 4 tens + 4 ones

(g) 2 tens and 0 ones = 20

(h) 4 tens and 0 ones = 40

(i) 3 tens and 0 ones = 30

Q.3. Write the numbers for the following number names :

Sol.

(a) thirty-six - 36

(b) twelve - 12

(c) twenty-one - 21

(d) forty-eight - 48

(e) sixteen - 16

(f) thirty-nine - 39

(g) twenty-seven - 27

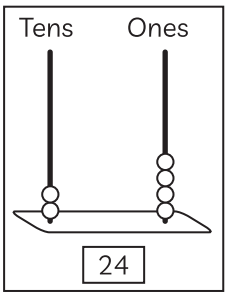
(h) nineteen - 19

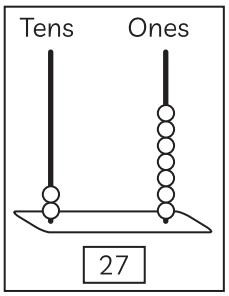
(i) fifty - 50

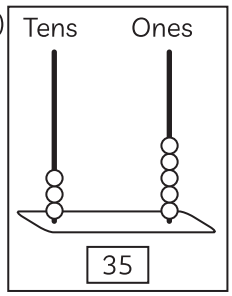
(j) forty-two - 42

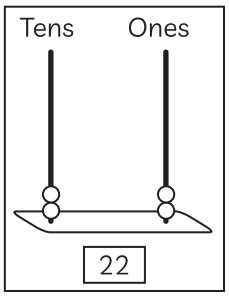
Q.4. Count the beads on each abacus and fill in the boxes:

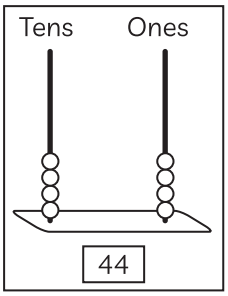
Sol.

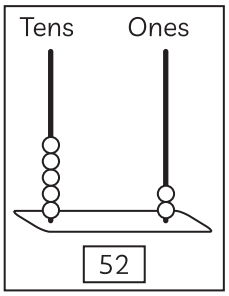
(a) 

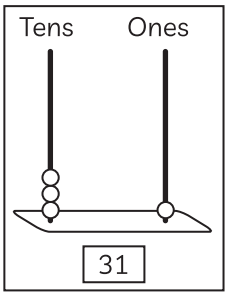
(b) 

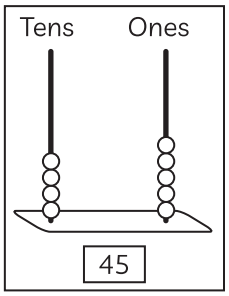
(c) 

(d) 

(e) 

(f) 

(g) 

(h) 

Q.5. Complete the table given below:

Sol.

	Before	In Between	After		Before	In Between	After
(a)	28	29	30	(b)	42	43	44
(c)	26	27	28	(d)	19	20	21
(e)	39	40	41	(f)	35	36	37
(g)	23	24	25				

Q.6. Write the numbers and the number names in placeholder:

Sol.

(a)	Thirty-six	36	(b)	22	Twenty-two
(c)	Thirty-seven	37	(d)	31	Thirty-one
(e)	Thirty-eight	38	(f)	24	Twenty-four
(g)	Thirty-nine	39	(h)	35	Thirty-five
(i)	Forty	40	(j)	30	Thirty
(k)	Forty-six	46	(l)	43	Forty-three
(m)	Forty-seven	47	(n)	45	Forty-five
(o)	Forty-eight	48	(p)	42	Forty-two
(q)	Forty-nine	49	(r)	40	Forty
(s)	Fifty	50	(t)	41	Forty-one

Q.7. Find the suitable number from the box and write:

Sol. (a) Two tens and two ones = 22

(b) Three tens and six ones = 36

42	16
36	22

Test Prep 4.4

Q.1. Put the correct symbol >, <, or = in the placeholder:

Sol. (a) 9 < 17 (b) 13 = 13 (c) 17 < 20

(d) 16 > 17 (e) 28 > 7 (f) 28 > 23

Q.2. Fill circle using >, <, or =:

Sol. (a) 29 < 41 (b) 33 < 44 (c) 39 > 16

(d) 15 < 23 (e) 14 = 14 (f) 38 > 15

(g) 36 < 50 (h) 42 > 33 (i) 30 < 40

Q.3. Encircle the smallest number:

Sol. (a) (15) 44 27 (b) 32 (5) 26 (c) 38 (30) 37

(d) (20) 45 46 (e) 19 23 (7)

Q.4. Encircle the biggest number:

Sol. (a) 22 32 (42) (b) 29 (41) 38 (c) (38) 29 17

(d) 17 25 (39) (e) 8 (27) 15

Test Prep 4.5

Q.1. Arrange the given numbers in ascending order:

Sol. (a) 27, 21, 32, 44 — 21, 27, 32, 44

(b) 35, 29, 46, 50 — 29, 35, 46, 50

(c) 31, 12, 50, 9 — 9, 12, 31, 50

(d) 45, 38, 41, 32 — 32, 38, 41, 45

(e) 37, 49, 44, 27 — 27, 37, 44, 49

(f) 46, 28, 12, 50 — 12, 28, 46, 50

(g) 15, 44, 26, 37 — 15, 26, 37, 44

Q.2. Arrange the given numbers in descending order:

Sol. (a) 14, 43, 25, 36 — 43, 36, 25, 14

(b) 23, 36, 28, 42 — 42, 36, 28, 23

(c) 45, 27, 11, 49 — 49, 45, 27, 11

(d) 26, 41, 23, 48 — 48, 41, 26, 23

(e) 35, 29, 46, 13 — 46, 35, 29, 13

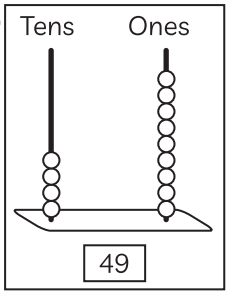
(f) 27, 16, 7, 40 — 40, 27, 16, 7

(g) 19, 35, 40, 22 — 40, 35, 22, 19

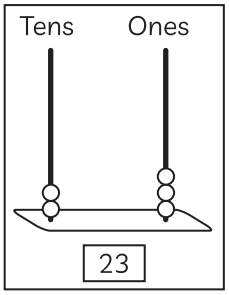
Maths Skills

Q.1. Write the numbers shown by these abacuses:

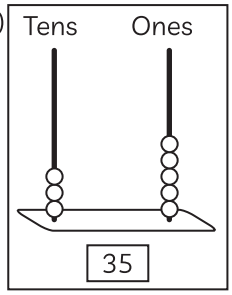
Sol. (a)



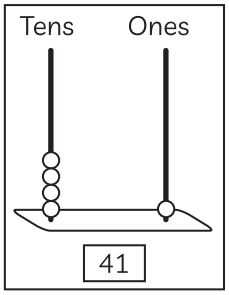
(b)



(c)



(d)



Q.2. Write the number names:

Sol. (a) 27 Twenty-seven

(b) 31 Thirty-one

(c) 40 Forty

(d) 19 Nineteen

(e) 45 Forty-five

(f) 36 Thirty-sex

Q.3. Write the numbers:

Sol. (a) Twenty-eight 28

(b) Thirty-six 36

(c) Forty-one 41

(d) Forty-five 45

(e) Twenty-one 21

(f) Fifty 50

Q.4. What comes before:

Sol. (a) 37 38

(b) 40 41

(c) 26 27

(d) 26 27

Q.5. What comes after:

Sol. (a) 26 27

(b) 30 31

(c) 44 45

(d) 49 50

Q.6. What comes in between:

Sol. (a) 29 30 31

(b) 42 43 44

(c) 37 38 39

Q.7. Encircle the bigger number:

Sol. (a) 9 16

(b) 24 36

(c) 50 45

Q.8. Encircle the smaller number:

Sol. (a) 28 49

(b) 44 34

(c) 40 32

Q.9. Arrange in ascending order:

Sol. (a)

8	33	15
8	15	33

(b)

38	49	17
17	38	49

(c)

27	12	40
12	27	40

Q.10. Arrange in descending order:

Sol. (a)

43	50	27
50	43	27

(b)

46	35	26
46	35	26

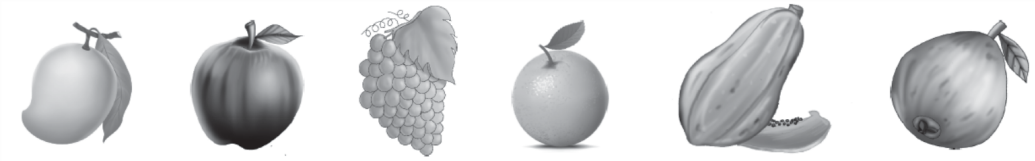
(c)

32	29	46
46	32	29

5. Ordinal Numbers

Test Prep 5.1

Q.1. Look at the fruits given below and fill in the blanks:



Mango Apple Grapes Orange Papaya Guava

Sol. (a) Grapes third (a) Papaya fifth (a) Apple second

(d) Guava sixth (e) Mango first (f) Orange fourth

Q.2. Colour as instructed:

Sol. Do yourself.

Q.3. Write the order of the letters of English alphabet:

Sol.

(A)	(F)	(G)	(D)
A-first	F-sixth	G-seventh	D-fourth
(I)	(E)	(C)	(H)
I-ninth	E-fifth	C-third	H-eighth

Q.4. Write the position of the following:

Sol. (a) The position of D in RED is third.

(b) The position of G in MANGO is fourth.

(c) The position of P in PARROT is fifth.

(d) The position of W in WATERMELON is sixth.

6. Counting Numbers 51 to 100

Test Prep 6.1

Q.1. Write these numbers in the expanded form:

Sol.
(a) 42 = 4 tens + 2 ones = 40 + 2
(b) 53 = 5 tens + 3 ones = 50 + 3
(c) 64 = 6 tens + 4 ones = 60 + 4
(d) 72 = 7 tens + 2 ones = 70 + 2
(e) 39 = 3 tens + 9 ones = 30 + 9
(f) 81 = 8 tens + 1 ones = 80 + 1
(g) 90 = 9 tens + 0 ones = 90 + 0

Q.2. Write these numbers in short form:

Sol.
(a) 3 tens and 4 ones = 34
(b) 6 tens and 6 ones = 66
(c) 4 tens and 6 ones = 46
(d) 7 tens and 8 ones = 78
(e) 5 tens and 0 ones = 50
(f) 8 tens and 9 ones = 89
(g) 7 tens and 1 one = 71
(h) 9 tens and 3 ones = 93
(i) 8 tens and 5 ones = 85
(j) 10 tens and 0 ones = 100

Maths Skills

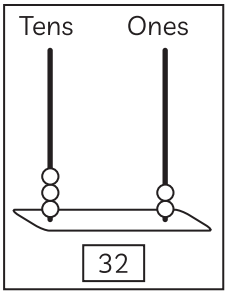
Q.1. Colour the greater number red:

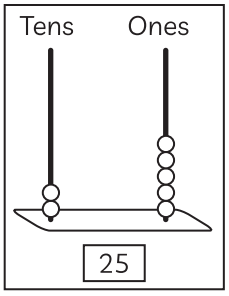
Sol.
(a) (27) (47)
(b) (15) (17)
(c) (89) (98)
(d) (73) (64)
(e) (29) (35)
(f) (82) (86)

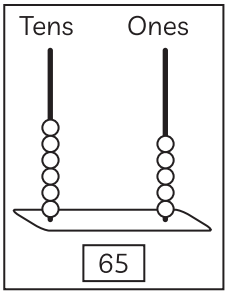
Q.2. Tick the smaller number:

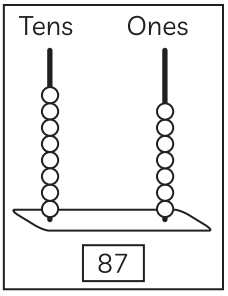
Sol.
(a) 32 ☐ 19 ✔
(b) 83 ✔ 95 ☐
(c) 76 ✔ 99 ☐
(d) 29 ✔ 61 ☐
(e) 55 ☐ 30 ✔
(f) 32 ☐ 6 ✔

Q.3. Write the numbers shown by the abacus:

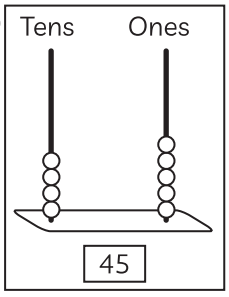
Sol.
(a) 

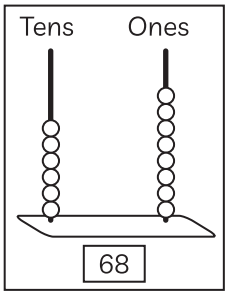
(b) 

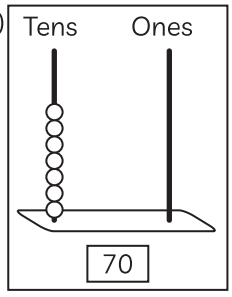
(c) 

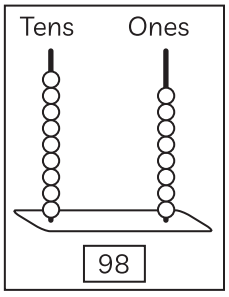
(d) 

Q.4. Draw beads for the given numbers:

Sol. (a) 

(b) 

(c) 

(d) 

Q.5. Write the numbers for:

Sol. (a) One hundred : 100 (b) Sixty-six : 66

(c) Fifty-nine : 59 (d) Thirty-three : 33

Q.6. Rewrite the numbers in ascending order:

Sol. (a) 44 33 47 22 65 — 22 33 44 47 65

(b) 77 98 66 55 32 — 32 55 66 77 98

Q.7. Rewrite the numbers in descending order:

Sol. (a) 66 23 98 34 45 — 98 66 45 34 23

(b) 33 56 87 99 72 — 99 87 72 56 33

Q.8. Fill in the blanks with >, < or =:

Sol. (a) 25 (>) 14 (b) 99 (=) 99 (c) 72 (>) 61

(d) 18 (<) 42 (e) 55 (>) 38 (f) 83 (<) 100

Q.9. Write the following in short form:

Sol. (a) 9 tens and 2 ones = 92 (b) 6 tens and 6 ones = 66

(c) 8 tens and 1 one = 81 (d) 7 tens and 7 ones = 77

Q.10. Write the following in expanded form:

Sol. (a) 36 = 3 tens and 6 ones (b) 98 = 9 tens and 8 ones

(c) 51 = 5 tens and 1 one (d) 74 = 7 tens and 4 ones

Q.11. Write the number name for:

Sol. (a) 60 = Sixty (b) 38 = Thirty-eight

(c) 79 = Seventy-nine (b) 40 = Forty

Q.12. I am a number who is just after 99. I am 100.

Q.13. We are four friends, we come in between 93 and 98.

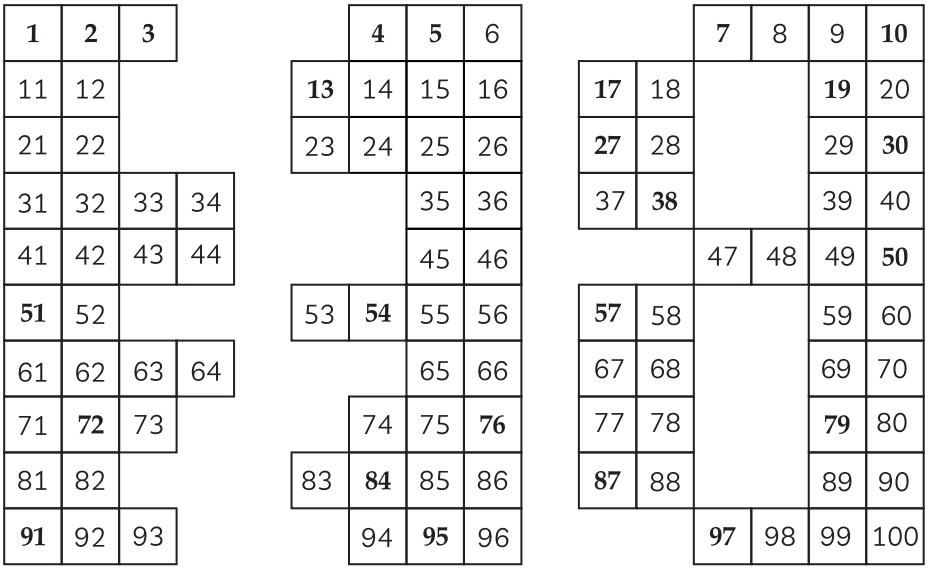
Sol. We are 94, 95, 96 and 97.

Q.14. I am a number that comes just before 80. I am ....79....

Q.15. I am a number that is one more than 76. I am ....77....

Creative Activity

Pihu wrote the numbers from 1 to 100. Her brother erased some numbers and cut the grid into pieces. Help her to fill in the boxes:



1	**2**	**3**							
11	12								
21	22								
31	32	33	34						
41	42	43	44						
51	52								
61	62	63	64						
71	**72**	73							
81	82								
91	92	93							

		4	**5**	6					
	13	14	15	16					
	23	24	25	26					
			35	36					
			45	46					
	53	**54**	55	56					
			65	66					
		74	75	**76**					
	83	**84**	85	86					
		94	**95**	96					

			7	8	9	**10**			
	17	18			**19**	20			
	27	28			29	**30**			
	37	**38**			39	40			
			47	48	49	**50**			
	57	58			59	60			
	67	68			69	70			
	77	78			**79**	80			
	87	88			89	90			
			97	98	99	100			

Maths Olympiad

Q. Tick (✔) the correct answer:

1. 99 is equal to ....9 tens 9 ones....

Sol. (a) 9 tens 4 ones ☐ (b) 9 tens 0 ones ☐ (c) 9 tens 9 ones ✔

2. There are ....9.... numbers between 90 and 100.

Sol. (a) 11 ☐ (b) 10 ☐ (c) 9 ✔

3. In a single digit number, the tens digit is ....0....

Sol. (a) 0 ✔ (b) 1 ☐ (c) 2 ☐

4. The greatest 1-digit number is ....9....

Sol. (a) 0 ☐ (b) 9 ✔ (c) 10 ☐

5. The greatest 2-digit number is ....99....

Sol. (a) 10 ☐ (b) 90 ☐ (c) 99 ✔

7. Addition

Test Prep 7.1

Q.1. Add by drawing line:

(a) $8 + 6 = 14$ |||||||| ||||||

(b) $7 + 8 = 15$ ||||||| ||||||||

(c) $3 + 8 = 11$ ||| ||||||||

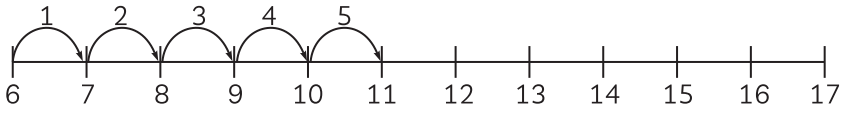
(d) $6 + 6 = 12$ |||||| ||||||

(e) $9 + 5 = 14$ ||||||||| |||||

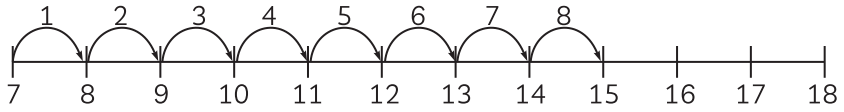
(f) $8 + 8 = 16$ |||||||| ||||||||

Q. Add by forward counting:

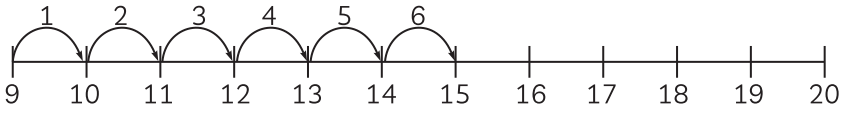
Sol. (a) $6 + 5 =$ 11



(b) $7 + 8 =$ 15



(c) $9 + 6 =$ 15



Test Prep 7.2

Q. Add the following:

Sol.

	64 =	6	tens +	4 ones
+	32 =	3	tens +	2 ones
	=	9	tens +	6 ones

1. 64 + 32 = 96

	71 =	7	tens +	1 one
+	8 =	0	tens +	8 ones
	=	7	tens +	9 ones

2. 71 + 8 = 79

	53 =	5	tens +	3 ones
+	26 =	2	tens +	6 ones
	=	7	tens +	9 ones

3. 53 + 26 = 79

	50 =	5	tens +	0 ones
+	30 =	3	tens +	0 ones
	=	8	tens +	0 ones

4. 50 + 30 = 80

	44 =	4	tens +	4 ones
+	33 =	3	tens +	3 ones
	=	7	tens +	7 ones

5. 44 + 33 = 77

	81 =	8	tens +	1 one
+	8 =	0	tens +	8 ones
	=	8	tens +	9 ones

6. 81 + 8 = 89

Test Prep 7.3

Q.1. Add using tens and ones:

Sol. (a)

	T	O
	2	4
+	3	5
	5	9

(b)

	T	O
	2	6
+	7	3
	9	9

(c)

	T	O
	3	3
+	4	5
	7	8

(d)

	T	O
	3	2
+	6	5
	9	7

(e)

	T	O
	4	3
+	3	4
	7	7

(f)

	T	O
	4	2
+	2	5
	6	7

(g)

	T	O
	4	8
+	5	0
	9	8

(h)

	T	O
	4	0
+	3	6
	7	6

(i)

	T	O
	4	5
+	3	3
	7	8

(j)

	T	O
	5	8
+	2	1
	7	9

(k)

	T	O
	6	8
+	2	0
	8	8

(l)

	T	O
	7	0
+	2	5
	9	5

Q.2. Add tens and ones to find sum:

Sol. (a)

	T	O
	7	3
+	1	4
	8	7

(b)

	T	O
	2	7
+	5	1
	7	8

(c)

	T	O
	5	6
+	2	2
	7	8

(d)

	T	O
	3	5
+	4	4
	7	9

(e)

	T	O
	8	1
+	1	7
	9	8

(f)

	T	O
	5	4
+	3	3
	8	7

(g)

	T	O
	6	1
+	1	6
	7	7

(h)

	T	O
	2	1
+	3	5
	5	6

(i)

	T	O
	7	0
+	1	0
	8	0

(j)

	T	O
	4	5
+	5	4
	9	9

(k)

	T	O
	4	1
+	2	2
	6	3

(l)

	T	O
	3	3
+	2	6
	5	9

Story Sums on Addition

Sol. **1.**

	T	O
	4	2
+	2	4
	6	6

2.

	T	O
	4	0
+		6
	4	6

3.

	T	O
	4	3
+	2	5
	6	8

4.

	T	O
	2	4
+	3	5
	5	9

Test Prep 7.4

Q.1. Add the following:

Sol. (a)

	T	O
	1	
	2	8
+	3	9
	6	7

(b)

	T	O
	1	
	1	9
+	3	6
	5	5

(c)

	T	O
	1	
	2	6
+	2	9
	5	5

(a)

	T	O
	1	
	1	8
+	1	7
	3	5

(e)

	T	O
	1	
	2	5
+	2	7
	5	2

(f)

	T	O
	1	
	4	9
+		6
	5	7

(g)

	T	O
	1	
		8
+	3	6
	4	4

(h)

	T	O
	1	
	3	5
+	4	7
	8	2

(i)

	T	O
	1	
	3	4
+	5	9
	9	3

(j)

	T	O
	1	
	4	5
+	3	8
	8	3

(k)

	T	O
	1	
		8
+	5	6
	6	4

(l)

	T	O
	1	
	4	7
+	3	5
	8	5

Q.2. Find the sum:

Sol. (a)

	T	O
	1	
	2	8
+	4	7
	7	5

(b)

	T	O
	1	
	4	6
+	3	9
	8	5

(c)

	T	O
	1	
	5	2
+	1	8
	7	0

(a)

	T	O
	1	
	3	9
+	2	6
	6	5

(e)

	T	O
	1	
	3	6
+	6	5
	10	1

(f)

	T	O
	1	
	5	7
+	3	8
	9	8

(g)

	T	O
	1	
	6	8
+	8	6
	15	4

(h)

	T	O
	1	
	4	5
+	5	6
	10	1

(i)

	T	O
	1	
	4	8
+	2	7
	7	5

(j)

	T	O
	1	
	2	6
+	3	8
	6	4

(k)

	T	O
	1	
	6	4
+	3	9
	10	3

(l)

	T	O
	1	
	6	9
+	9	2
	16	1

(m)

	T	O
	1	
	6	8
+	3	9
	10	7

(n)

	T	O
	1	
	5	4
+	4	9
	10	3

(o)

	T	O
	1	
	9	8
+	8	7
	18	5

(p)

	T	O
	1	
	4	9
+	9	3
	14	2

(q)

	T	O
	1	
	4	5
+	5	8
	10	3

(r)

	T	O
	1	
	4	6
+	4	4
	11	0

(s)

	T	O
	1	
	8	4
+	4	9
	13	3

(t)

	T	O
	1	
	3	9
+	6	8
	10	7

Test Prep 7.5

Q.1. Add the following:

Sol. (a)

	T	O
	1	
	3	4
	4	6
+	3	9
	11	9

(b)

	T	O
	1	
	4	2
	3	7
+	8	4
	16	3

(c)

	T	O
	1	
	6	3
	2	4
+	2	5
	11	2

(d)

	T	O
	1	
	8	2
	2	6
+	1	5
	12	3

(e)

	T	O
	1	
	2	6
	9	4
+	4	5
	16	5

(f)

	T	O
	2	
	6	7
	7	8
+	2	9
	17	4

(g)

	T	O
	1	
	6	8
	2	5
+	4	3
	13	6

(h)

	T	O
	1	
	3	4
	2	8
+	3	3
	12	3

Q.2. Find the sum:

Sol. (a)

	T	O
	1	
	3	2
	2	6
+	1	9
	7	7

(b)

	T	O
	2	
	7	7
	4	7
+	5	8
	18	2

(c)

	T	O
	1	
	9	2
	2	5
+	2	8
	14	5

(d)

	T	O
	2	
	4	8
	3	9
+	6	4
	15	1

(e)

	T	O
	1	
	1	8
	2	9
+	4	6
	9	3

(f)

	T	O
	2	
	6	7
	2	3
+	5	7
	14	7

(g)

	T	O
	1	
	1	8
	3	6
+	2	4
	7	8

(h)

	T	O
	1	
	2	3
	4	1
+	1	6
	8	0

(i)

	T	O
	2	
	3	8
	4	7
+	5	6
	14	1

(j)

	T	O
	1	
	2	3
	6	5
+	7	6
	16	4

(k)

	T	O
	2	
	5	6
	1	7
+	2	8
	10	1

(l)

	T	O
	1	
	8	2
	1	9
+	6	2
	16	3

(m)

	T	O
	1	
	4	8
	3	6
+	8	2
	16	6

(n)

	T	O
	1	
	7	6
	2	3
+	6	3
	16	2

(o)

	T	O
	1	
	1	8
	2	9
+	3	4
	8	1

(p)

	T	O
	1	
	1	6
	2	5
+	3	8
	8	9

(q)

	T	O
	1	
	3	3
	6	4
+	1	8
	11	5

(r)

	T	O
	2	
	2	7
	1	8
+	3	6
	8	1

(s)

	T	O
	1	
	2	3
	1	6
+	6	1
	10	0

(t)

	T	O
	1	
	9	2
	3	6
+	1	8
	14	6

Story Sums on Addition

1.

	T	O
	1	
	2	6
+	1	8
	4	4

2.

	T	O
	1	
	8	2
+	4	8
	13	0

3.

	T	O
	1	
	4	9
+	5	8
	10	7

4.

	T	O
	1	
	2	8
	1	2
+		7
	4	7

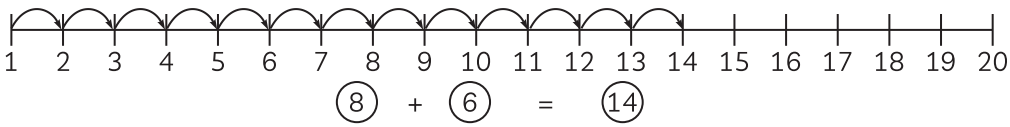
5.

	T	O
	2	
	3	4
	2	9
+	4	7
	11	0

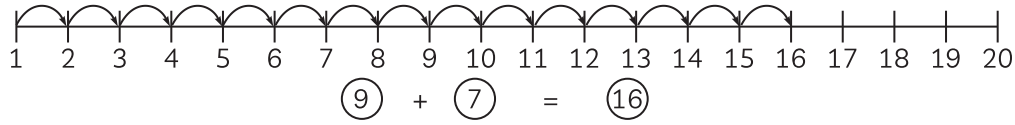
Maths Skills

Q.1. Find the sum on number line:

Sol. (a)



(b)



Q.2. Find the sum:

Sol. (a) 2 + 3 + 8 = 13 (b) 6 + 4 + 7 = 17

(c) 7 + 8 + 2 = 17 (d) 8 + 5 + 6 = 19

Q.3. Add:

Sol. (a)

	2 4
+	3 5
	5 9

(b)

	3 7
+	2 1
	5 8

(c)

	4 6
+	2 2
	6 8

(d)

	5 1
+	4 3
	9 4

Q.4. Add:

Sol. (a)

	T	O
	1	
	3	7
+	8	9
	12	6

(b)

	T	O
	1	
	5	4
+	2	8
	12	2

(c)

	T	O
	1	
	3	7
+	2	8
	6	5

(d)

	T	O
	1	
	2	6
+	3	6
	6	2

Q.5. Add:

Sol. (a)

	T	O
	1	
	2	4
	3	6
+	5	4
	11	4

(b)

	T	O
	1	
	3	7
	2	8
+	1	6
	8	1

(c)

	T	O
	1	
	5	2
	2	2
+	3	6
	11	3

(d)

	T	O
	1	
	2	7
	2	8
+	3	2
	8	7

Q.6. Surbhi scores 27 runs and Divya scores 45 runs. How many runs do they score together?

Sol. They scored 72 runes.

	T	O
	2	7
+	4	5
	7	2

Q.6. There are 44 children in class 1 A and 26 children in class 1 B. How many children are there in all?

Sol. There are 70 children.

	T	O
	4	4
+	2	6
	7	0

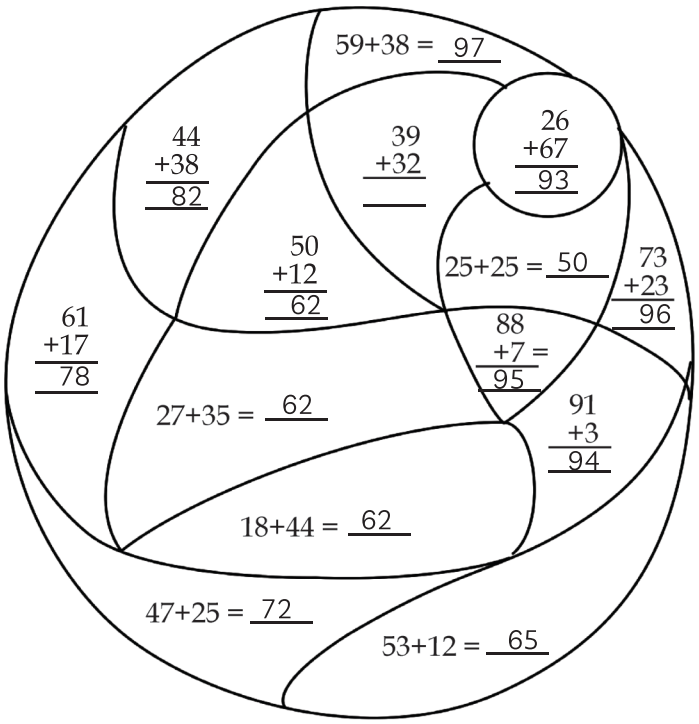
Creative Activity

Christmas has arrived and it is time to dress up like Santa. One element is missing and hidden here. Can you see it yet? If not, solve the problems and follow the instructions to find one. Colour the blocks as:

'Red' : Where the answer is '62'.

'Yellow' Where the answer is '93'.

Sol.



Maths Olympiad

Tick (✔) the correct answer:

Q.1. 2 more than 59 is 61 .

(a) ~~60~~ (b) 61✔ (c) ~~62~~

Q.2. The sum of 15 and 3 is 18 .

(a) 18✔ (b) ~~16~~ (c) ~~21~~

Q.3. 6 + 7 + 8 = 21 .

(a) ~~9~~ (b) ~~10~~ (c) 21✔

Q.4. 10 more than the greatest one-digit number is 19 .

(a) ~~18~~ (b) ~~11~~ (c) 19✔

Q.5. 6 tens and 9 ones + 7 tens and 8 ones = 147 .

(a) ~~89~~ (b) ~~78~~ (c) 147✔

Q.6. Sum of 27 and 38 is 65.

(a) True✔ (b) ~~False~~ (c) ~~None of these~~

Q.7. Sum of 11, 12 and 13 is 36 .

(a) ~~14~~ (b) ~~35~~ (c) 36✔

Q.8. There are 38 big fishes and 27 small fishes in the pond. How many fishes are there in all?

(a) 65 ✔ (b) ~~39~~ (c) ~~55~~

Q.9. There are 19 eggs in a tray. 26 more eggs are added in the tray. Total eggs are 45 .

(a) ~~35~~ (b) 45 ✔ (c) ~~44~~

Q.10. There are 24 biscuit packets in a rack and 25 biscuit packets are in another rack. Total biscuit packets in both the racks are 49 .

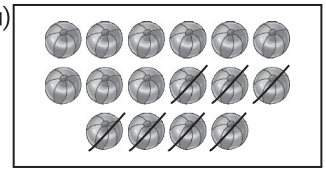
(a) ~~26~~ (b) ~~29~~ (c) 49 ✔

8. Subtraction

Test Prep 8.1

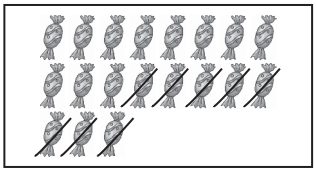
Q.1. Cross out the picture to get the result:

Sol. (a)



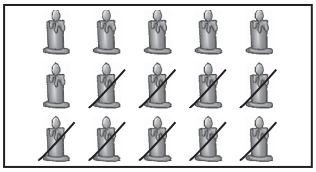
16 – 7 = 9

(b)



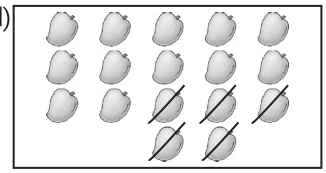
19 – 8 = 11

(c)



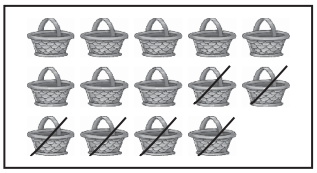
15 – 9 = 6

(d)



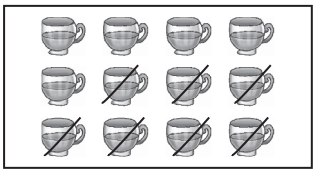
17 – 5 = 12

(e)



14 – 6 = 8

(f)



12 – 7 = 5

Q.2. Draw lines then cross out to subtract. One has been done for you:

Sol. (a)

T	O
1	5
–	6
	9

(b)

T	O
1	7
–	8
	9

(c)

T	O
1	2
–	7
	5

(a)

T	O
1	6
–	6
1	0

(b)

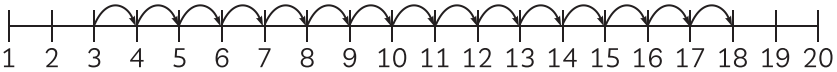
T	O
1	3
–	8
	5

(c)

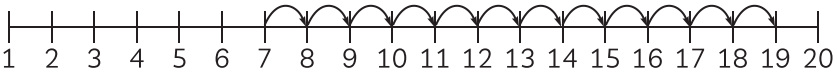
T	O
1	2
–	5
	7

Q.3. Subtract with the help of number line:

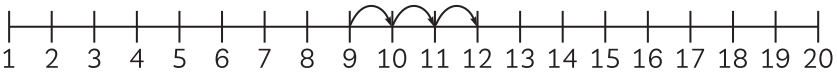
Sol. (a) 18 – 3 = 15



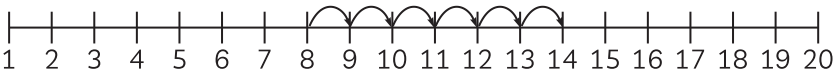
(b) 19 – 7 = 12



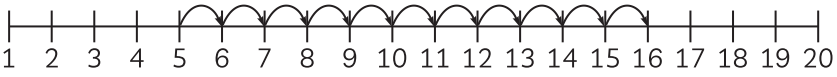
(c) 12 – 9 = 3



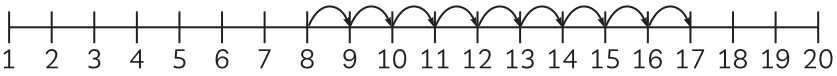
(d) 14 – 8 = 6



(e) 16 – 5 = 11



(f) 17 – 8 = 9



Test Prep 8.2

Q.1. Subtract and write in the box:

Sol. **1.**

	64 =	6	tens +	4	ones
–	51 =	5	tens +	1	ones
	13 =	1	tens +	3	ones

2.

	46 =	4	tens +	6	ones
–	22 =	2	tens +	2	ones
	24 =	2	tens +	4	ones

3.

	78 =	7	tens +	8	ones
–	34 =	3	tens +	4	ones
	44 =	4	tens +	4	ones

4.

	93 =	9	tens +	3	ones
–	50 =	5	tens +	0	ones
	43 =	4	tens +	3	ones

5.

	87 =	8	tens +	7	ones
–	43 =	4	tens +	3	ones
	44 =	4	tens +	4	ones

6.

	84 =	8	tens +	4	ones
–	54 =	5	tens +	4	ones
	30 =	3	tens +	0	ones

Test Prep 8.3

Q.1. Subtract:

Sol. (a)

	T	O
	7	6
–	5	3
	2	3

(b)

	T	O
	9	0
–	4	0
	5	0

(c)

	T	O
	6	9
–	3	5
	3	4

(d)

	T	O
	8	6
–	5	3
	3	3

(e)

	T	O
	5	8
–	3	2
	2	6

(f)

	T	O
	9	4
–	7	4
	2	0

(g)

	T	O
	6	8
–	2	3
	4	5

(h)

	T	O
	8	9
–	5	4
	4	5

(i)
	T	O
	7	5
–	2	0
	5	5

(j)
	T	O
	6	5
–	2	3
	4	2

(k)
	T	O
	6	7
–	5	3
	1	4

(l)
	T	O
	9	7
–	5	6
	4	1

Q.2. Subtract:

Sol. (a)
	T	O
	4	5
–	3	1
	1	4

(b)
	T	O
	6	4
–	6	1
	0	3

(c)
	T	O
	8	3
–	6	0
	2	3

(d)
	T	O
	5	7
–		4
	5	3

(e)
	T	O
	9	6
–		3
	9	3

(f)
	T	O
	3	6
–		2
	3	4

(g)
	T	O
	2	6
–		3
	2	3

(h)
	T	O
	6	6
–		6
	6	0

(i)
	T	O
	9	8
–	3	3
	6	5

(j)
	T	O
	5	9
–	4	4
	1	5

(k)
	T	O
	8	5
–	2	3
	6	2

(l)
	T	O
	7	0
–	6	0
	1	0

(m)
	T	O
	4	8
–	2	0
	2	8

(n)
	T	O
	6	7
–	1	3
	5	4

(o)
	T	O
	5	2
–	1	2
	4	0

(p)
	T	O
	7	6
–	3	2
	4	4

(q)
	T	O
	8	5
–	3	0
	5	5

(r)
	T	O
	6	7
–	3	7
	3	0

(s)
	T	O
	4	8
–	2	5
	2	3

(t)
	T	O
	4	4
–	3	3
	1	1

Test Prep 8.4

Q.1. Subtract the following:

Sol. (a)
	T	O
	7	17
	8	7
–	3	9
	4	8

(b)
	T	O
	3	12
	4	2
–	2	5
	1	7

(c)
	T	O
	6	14
	7	4
–	3	5
	3	9

(d)
	T	O
	7	11
	8	1
–	4	9
	3	2

(e)

	T	O
	5	13
	6	3
–	2	8
	3	5

(f)

	T	O
	4	10
	5	0
–	4	8
	0	2

(g)

	T	O
	8	10
	9	0
–	8	8
	0	2

(h)

	T	O
	7	14
	8	4
–	4	6
	3	8

Q.2. Subtract the following:

Sol. (a)

	T	O
	4	10
	5	0
–	2	7
	2	3

(b)

	T	O
	3	10
	4	0
–	2	9
	1	1

(c)

	T	O
	8	13
	9	3
–	4	6
	4	5

(d)

	T	O
	5	12
	6	2
–	5	9
	0	3

(e)

	T	O
	2	12
	3	2
–	1	9
	1	3

(f)

	T	O
	3	11
	4	1
–	2	6
	1	5

(g)

	T	O
	5	10
	6	0
–	4	6
	1	4

(h)

	T	O
	6	13
	7	3
–	3	8
	3	5

(i)

	T	O
	6	16
	7	6
–	6	7
	0	9

(j)

	T	O
	8	12
	9	2
–	7	6
	1	6

(k)

	T	O
	2	18
	3	8
–	2	9
	0	8

(l)

	T	O
	4	14
	5	4
–	2	5
	2	9

(m)

	T	O
	8	11
	9	1
–	4	8
	4	3

(n)

	T	O
	7	14
	8	4
–	3	7
	4	7

(o)

	T	O
	6	10
	7	0
–		5
	6	5

(p)

	T	O
	7	12
	8	2
–		9
	7	3

(q)

	T	O
	6	12
	7	2
–	4	5
	2	7

(r)

	T	O
	5	11
	6	1
–	4	5
	1	6

(s)

	T	O
	7	14
	8	4
–	5	6
	2	8

(t)

	T	O
	2	15
	3	5
–		8
	2	7

Story Sums on Subtraction

Sol. 1.

	T	O
	4	8
–	2	3
	2	5

Now, 25 books are left in the shelf

2.

	T	O
	6	7
–	1	6
	5	1

51 Children were present in the class.

3.

	T	O
	3	8
–	1	2
	1	6

16 apples are fresh.

4.

	T	O
	3	6
–	2	9
	0	7

7 pens are not working.

5.

	T	O
	9	2
–	7	6
	1	6

There are 16 girls.

Maths Skills

Q.1. Subtract:

Sol. (a) 16 – 9 = 7 (b) 17 – 3 = 14 (c) 18 – 8 = 10

(d) 13 – 5 = 8 (e) 21 – 6 = 15 (f) 24 – 9 = 15

Q.2. Subtract:

Sol. (a)

	T	O
	6	0
–	5	0
	1	0

(b)

	T	O
	3	8
–	2	6
	1	2

(c)

	T	O
	2	9
–	2	8
	0	1

(d)

	T	O
	4	5
–	3	4
	1	1

Q.3. Subtract:

Sol. (a)

	T	O
	4	12
	5	2
–	2	7
	2	5

(b)

	T	O
	3	13
	4	3
–	3	6
	0	7

(c)

	T	O
	8	11
	9	1
–	5	7
	3	4

(d)

	T	O
	7	13
	8	3
–	4	8
	3	5

Sol. **4.**

	T	O
	3	4
–	1	3
	2	1

21 passengers are left.

5.

	T	O
	7	9
–	5	2
	2	7

There are 27 apple trees.

6.

	T	O
	3	12
	4	2
–	2	5
	1	7

17 monkeys are still awake.

Test Prep 8.5

Q. Fill in the blanks:

Sol. (a) 4 + (9) = 13 ⟶ 13 – (4) = 9 and 13 – (9) = 4

(b) 5 + (8) = 13 ⟶ 13 – (5) = 8 and 13 – (8) = 5

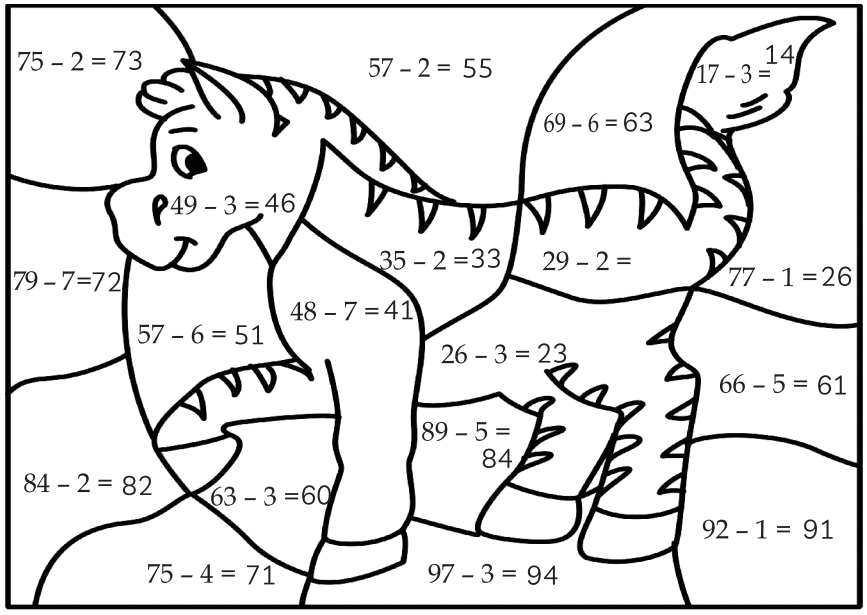
(c) 16 – (5) = 11 ⟶ 16 – (11) = 5 and 5 + (11) = 16

(d) 22 – (7) = 15 ⟶ 22 – (15) = 7 and 15 + (7) = 22

Creative Activity

Q. The wonderland amusement park is repainting their rides. Colour Mr. Zebra by solving te subtraction problem. If the answer is less than 50, colour sky blue, else leave white.

Sol.



Maths Olympiad

Tick (✔) the correct answer:

Q.1. 6 less than the greatest 2-digit number is 93 .

(a) 91 ✗ (b) 94 ✗ (c) 93 ✔

Q.2. 18–1 ten = 8 ones .

(a) 8 ones ✔ (b) 18 ones ✗ (c) 1 ten ✗

Q.3. 5 tens – 0 = 50 .

(a) 5 ✗ (b) 50 ✔ (c) 15 ✗

Q.4. 4 tens – 2 tens = 20 .

(a) 10 ✗ (b) 20 ✔ (c) 60 ✗

Q.5. What comes just after 39 – 28 ?

(a) 11 ✔ (b) 12 ✗ (c) 13 ✗

9. Lines And Shapes

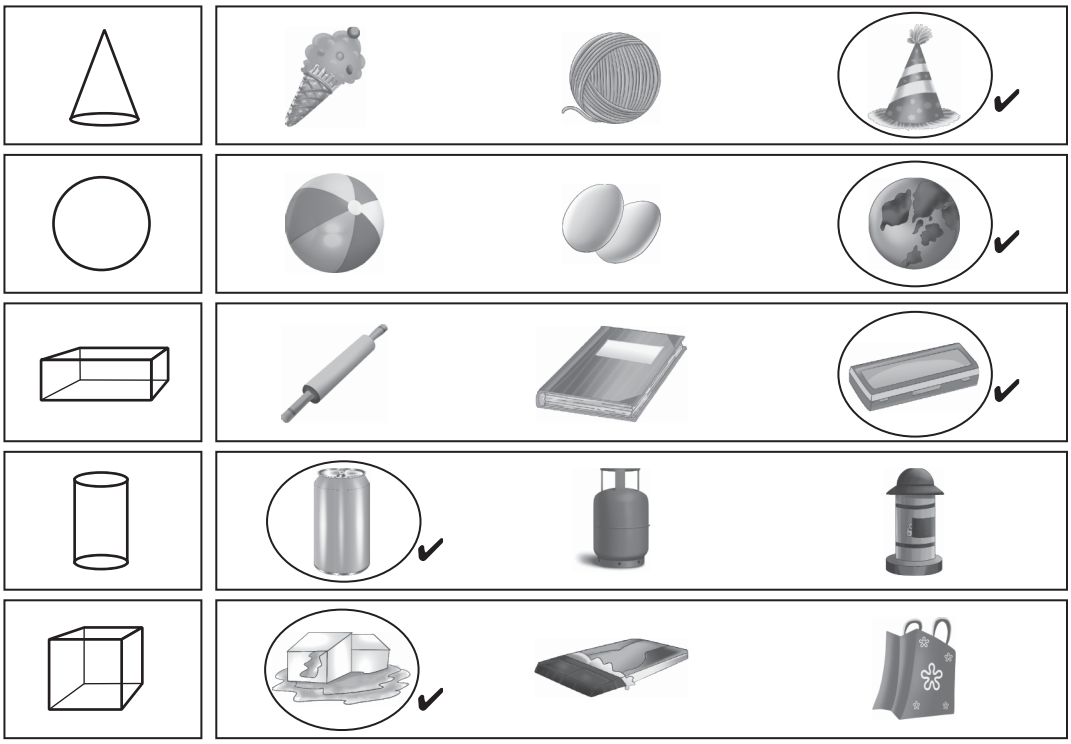
Test Prep 9.1

Do yourself.

Test Prep 9.2

Q.1. Tick (✔) the figure that have the same shape with first:

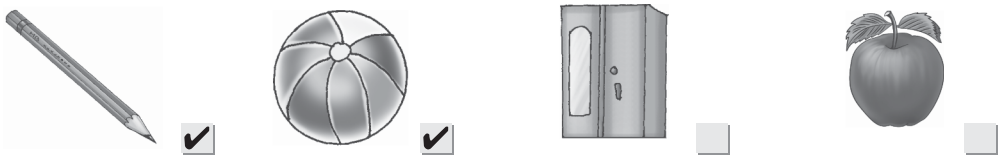
Sol.



Test Prep 9.3

Q.1. Tick (✔) the objects that will roll:

Sol.



Q.1. Tick (✔) the objects that will slide:

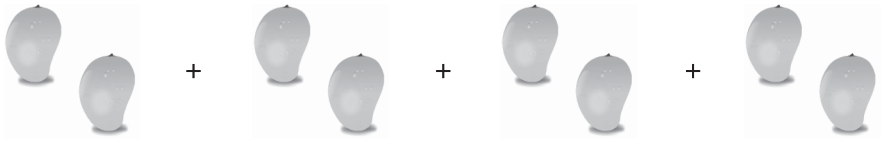
Sol.

10. Multiplication

Test Prep 10.1

Fill in the boxes:

Sol.



$= 2 + 2 + 2 + 2 = \boxed{8}$

$= 4 \times 2 = \boxed{8}$

$= 5 + 5 + 5 + 5 + 5 = \boxed{25}$

$\boxed{5} \times \boxed{5} = \boxed{25}$

$= 3 + 3 + 3 + 3 + 3 = \boxed{15}$

$\boxed{5} \times \boxed{3} = \boxed{15}$

$4 + 4 = \boxed{8}$

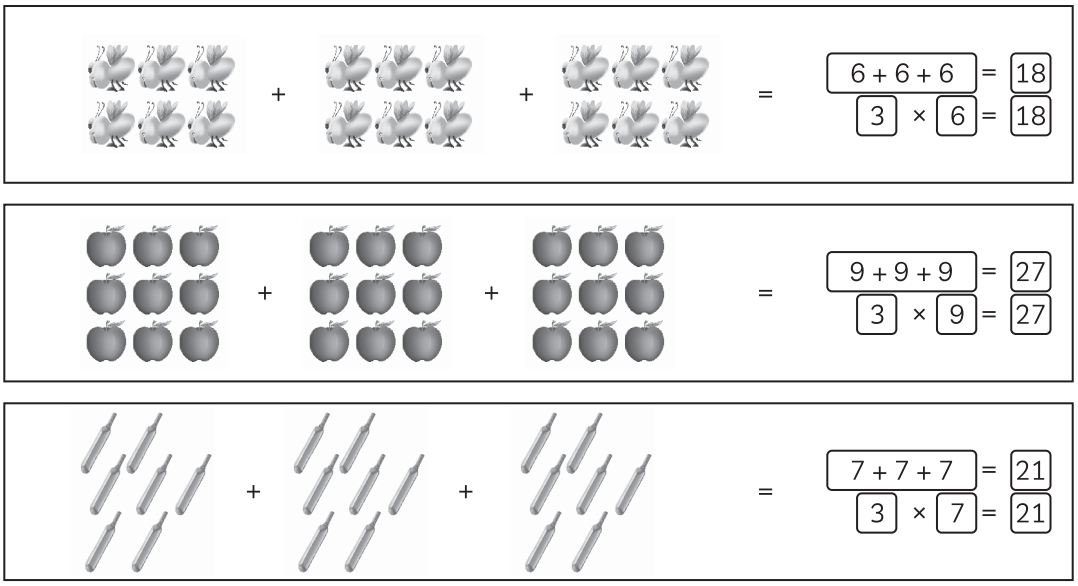
$\boxed{2} \times \boxed{4} = \boxed{8}$

$\boxed{5 + 5 + 5} = \boxed{15}$

$\boxed{3} \times \boxed{5} = \boxed{15}$

$\boxed{7 + 7} = \boxed{14}$

$\boxed{2} \times \boxed{7} = \boxed{14}$



Test Prep 10.2

Q. Write the multiplication fact for each of the following:

Sol.

	Repeated Addition	Multiplication Facts
1.	$2+2+2=6$	$3 \times 2 = 6$
2.	$3+3=6$	$2 \times 3 = 6$
3.	$3+3+3+3=12$	$4 \times 3 = 12$
4.	$2+2+2+2+2=10$	$5 \times 2 = 10$
5.	$4+4+4+4=16$	$4 \times 4 = 16$
6.	$3+3+3+3+3=15$	$5 \times 3 = 15$
7.	$5+5+5+5=20$	$4 \times 5 = 20$
8.	$4+4+4+4+4+4=24$	$6 \times 4 = 24$
9.	$5+5+5+5+5+5=30$	$6 \times 5 = 30$
10.	$2+2+2+2+2+2+2=14$	$7 \times 2 = 14$
11.	$2+2+2+2+2+2+2+2+2=18$	$9 \times 2 = 18$
12.	$5+5+5+5+5+5+5=35$	$7 \times 5 = 35$

Test Prep 10.3

Q. Fill in the boxes:

Sol.

1.	$3 \times 6 = 18$	**2.**	$5 \times 2 = 10$	**3.**	$4 \times 1 = 4$
4.	$6 \times 8 = 48$	**5.**	$6 \times 9 = 54$	**6.**	$5 \times 3 = 15$
7.	$5 \times 1 = 5$	**8.**	$2 \times 7 = 14$	**9.**	$3 \times 8 = 24$
10.	$2 \times 9 = 18$	**11.**	$5 \times 7 = 35$	**12.**	$2 \times 8 = 16$
13.	$4 \times 9 = 36$	**14.**	$4 \times 6 = 24$	**15.**	$3 \times 5 = 15$
16.	$6 \times 7 = 42$	**17.**	$5 \times 2 = 10$	**18.**	$5 \times 9 = 45$
19.	$5 \times 5 = 25$	**20.**	$4 \times 8 = 32$	**21.**	$6 \times 1 = 6$
22.	$3 \times 2 = 6$	**23.**	$3 \times 0 = 0$	**24.**	$4 \times 4 = 16$
25.	$6 \times 0 = 0$	**26.**	$2 \times 2 = 4$	**27.**	$2 \times 9 = 18$
28.	$3 \times 7 = 21$	**29.**	$4 \times 7 = 28$	**30.**	$6 \times 6 = 36$

Test Prep 10.4

Q. Find the product:

Sol.

1.

T	O
	5
×	4
2	0

2.

T	O
	9
×	6
5	4

3.

T	O
	4
×	3
1	2

4.

T	O
	7
×	4
2	8

5.

T	O
	6
×	5
3	0

6.

T	O
	7
×	6
4	2

7.

T	O
	8
×	5
4	0

8.

T	O
	7
×	3
2	1

9.

T	O
	4
×	6
2	4

10.

T	O
	9
×	5
4	5

11.

T	O
	8
×	3
2	4

12.

T	O
	9
×	3
2	7

Test Prep 10.4

Q. Multiply:

Sol.

1.

T	O
3	2
×	3
9	6

2.

T	O
4	2
×	2
8	4

3.

T	O
2	8
×	1
2	8

4.

T	O
2	4
×	2
4	8

5.

T	O
1	5
×	1
1	5

6.

T	O
6	2
×	1
6	2

7.

T	O
4	4
×	2
8	8

8.

T	O
2	2
×	3
6	6

9.

T	O
1	9
×	1
1	9

10.

T	O
2	2
×	4
8	8

11.

T	O
2	3
×	3
6	9

12.

T	O
5	5
×	1
5	5

Story Sums on Multiplication

Sol.

1.

	7
×	2
1	4

7 Cats have 14 eyes.

2.

	2
×	8
1	6

There are 16 sunglasses.

3.

	3
×	5
1	5

There are 15 hands.

4.

	5
×	6
3	0

There are 30 packets.

5.

	4
×	6
2	4

There are 24 feet.

6.

	6
×	8
4	8

Total wheels are 48.

Maths Skills

Q.1. Write these repeated addition as multiplication:

Sol. (a) $2 + 2 + 2 + 2 + 2$ $\boxed{5 \times 2 = 10}$ (b) $5 + 5 + 5$ $\boxed{3 \times 5 = 15}$

(c) $6 + 6 + 6 + 6$ $\boxed{4 \times 6 = 24}$ (d) $7 + 7 + 7 + 7 + 7 + 7$ $\boxed{6 \times 7 = 42}$

Q.2. Write these multiplication as repeated addition:

Sol. (a) $5 \times 6 =$ $\boxed{5 \times 5 \times 5 \times 5 \times 5 \times 5 = 30}$ (b) $3 \times 7 =$ $\boxed{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 = 21}$

(c) $4 \times 5 =$ $\boxed{4 \times 4 \times 4 \times 4 \times 4 = 20}$ (d) $2 \times 8 =$ $\boxed{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 16}$

Q.3. Find the product:

Sol. (a) $6 \times 9 =$ $\boxed{54}$ (b) $4 \times 7 =$ $\boxed{28}$ (c) $3 \times 8 =$ $\boxed{24}$

(d) $2 \times 5 =$ $\boxed{10}$ (e) $3 \times 3 =$ $\boxed{9}$ (f) $6 \times 6 =$ $\boxed{36}$

Q.4. Multiply:

Sol. (a)

T	O
	4
×	5
2	0

(b)

T	O
	3
×	6
1	8

(c)

T	O
	5
×	5
2	5

(d)

T	O
	4
×	4
1	6

Q.5. Multiply:

Sol. (a)

T	O
3	2
×	2
6	4

(b)

T	O
3	3
×	3
9	9

(c)

T	O
4	4
×	2
8	8

(d)

T	O
8	9
×	1
8	9

Sol. **6.**

	8
×	5
4	0

5 children have 40 crayons.

7.

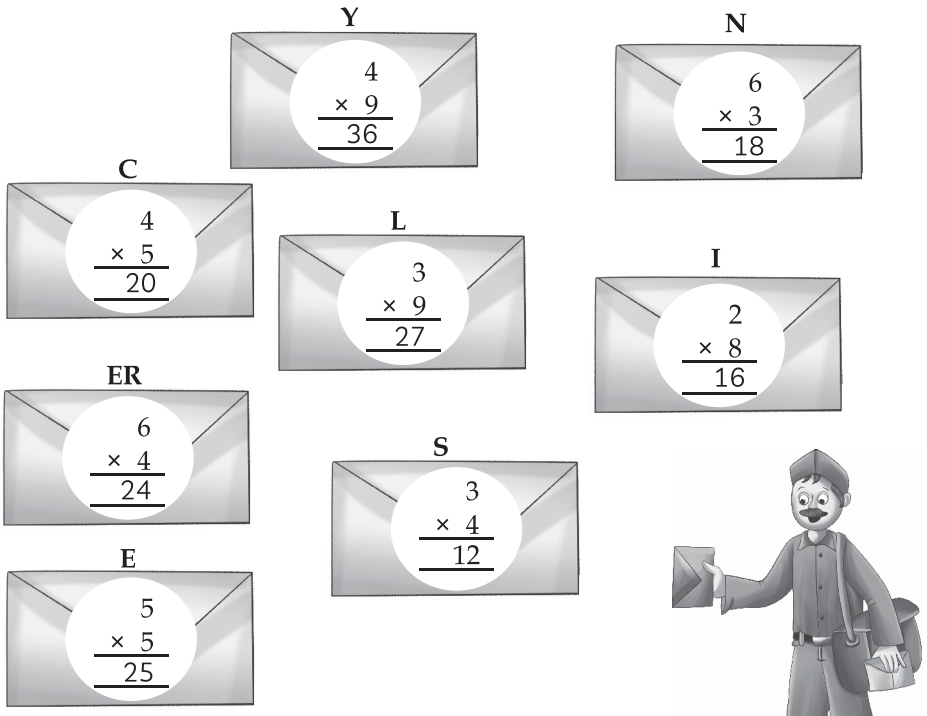
2	4
×	2
4	8

There are 48 sweets in all.

Creative Activity

Q. Solve the puzzle on these envelopes. Now arrange the letters in ascending order of the number on the envelope.

Sol.



What word do you use to end a letter?

12	16	18	20	24	24	25	27	36
S	**I**	**N**	**C**	**E**	**R**	**E**	**L**	**Y**

Time : 2 hours **Examination Preparation-I** M.M. : 80

Q.1. Write the number names of the following:

Sol. (a) 73 : Seventy-three (b) 35 : Thirty-five

(c) 48 : Forty-eight (d) 87 : Eighty-seven

Q.2. Write in digits:

Sol. (a) Seventy-eight : 78 (b) Eighty-six : 86

(c) Fourteen : 14 (d) Ninety-nine : 99

Q.3. Tick (✔) the correct answer:

Sol. (a) Which is the greatest 2-digit number?

1		90		99	✔

(b) Which is equal to 3 tens?

30	✔	20		40	

(c) Which number comes in between 36 and 38?

35		37	✔	39	

(d) Out of these number, which is the smallest?

49		52		31	✔

Q.4. Fill in the blanks:

Sol. (a) 4 tens and 8 ones is same as 48 . (b) 25 – 4 = 21 .

(c) Ninety-seven = 90 + 7 . (d) 92 – 32 = 60 .

Q.5. Write 'T' for true and 'F' for false:

Sol. (a) 53 is same as 5 tens and 3 ones. T

(b) Symbol for equal to is '>'. F

(c) 87 comes just before 86. F

(d) 47 < 53. T

Q.6. Add:

Sol. (a)

	8	2
+	1	0
	9	2

(b)

	3	5
+	4	2
	7	7

(c)

	4	7
+	3	1
	7	8

(d)

	4	6
+	2	8
	7	4

(e)

	5	8
+	3	9
	9	7

(f)

	6	3
+	3	7
	1	0 0

(g)
$$\begin{array}{r} 43 \\ 28 \\ +\ 29 \\ \hline 100 \end{array}$$

(h)
$$\begin{array}{r} 31 \\ 29 \\ +\ 16 \\ \hline 76 \end{array}$$

(i)
$$\begin{array}{r} 49 \\ 18 \\ +\ 16 \\ \hline 83 \end{array}$$

Q.7. Subtract:

Sol. (a)
$$\begin{array}{r} 98 \\ -\ 42 \\ \hline 56 \end{array}$$

(b)
$$\begin{array}{r} 50 \\ -\ 30 \\ \hline 20 \end{array}$$

(c)
$$\begin{array}{r} 46 \\ -\ 13 \\ \hline 33 \end{array}$$

(d)
$$\begin{array}{r} 85 \\ -\ 36 \\ \hline 49 \end{array}$$

(e)
$$\begin{array}{r} 74 \\ -\ 48 \\ \hline 26 \end{array}$$

(f)
$$\begin{array}{r} 97 \\ -\ 89 \\ \hline 08 \end{array}$$

Q.8. Multiply the following:

Sol. (a)
$$\begin{array}{r} 6 \\ \times\ 4 \\ \hline 24 \end{array}$$

(b)
$$\begin{array}{r} 3 \\ \times\ 6 \\ \hline 18 \end{array}$$

(c)
$$\begin{array}{r} 8 \\ \times\ 5 \\ \hline 40 \end{array}$$

(d)
$$\begin{array}{r} 9 \\ \times\ 3 \\ \hline 27 \end{array}$$

(e)
$$\begin{array}{r} 8 \\ \times\ 4 \\ \hline 32 \end{array}$$

(f)
$$\begin{array}{r} 7 \\ \times\ 6 \\ \hline 42 \end{array}$$

Q.9. I bought 20 apples, 15 mangoes and 36 oranges. How many fruits did I buy?

Sol. 20 + 15 + 36 = 71 (I bought 71 fruits)

Q.10. The school library had 73 book. The library issued 55 books. How many book are left in the library now?

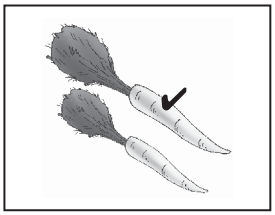
Sol. 73 – 55 = 18 (18 books are left)

11. Measurement

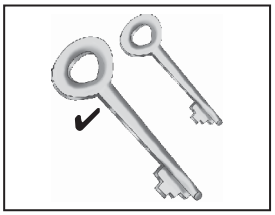
Test Prep 11.1

Q.1. Tick (✔) the longer object:

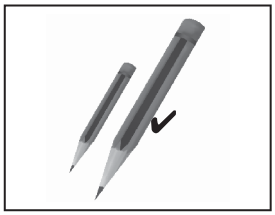
Sol. (a)



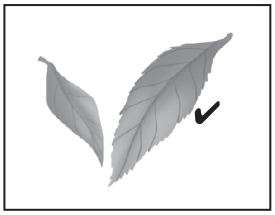
(b)



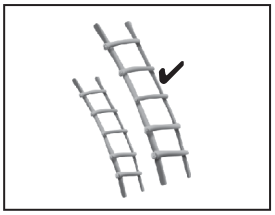
(c)



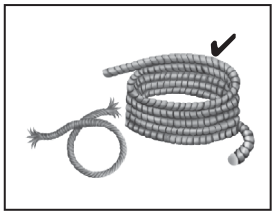
(d)



(e)



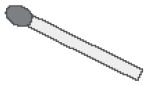
(f)



Q.2. Tick (✔) the longer and cross (✗) the shorter :

Sol. (a)

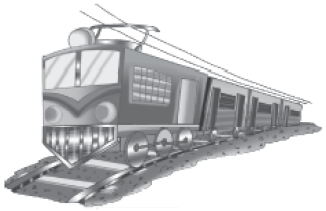
✗



✗

✔

(b)



✔

✗

✔

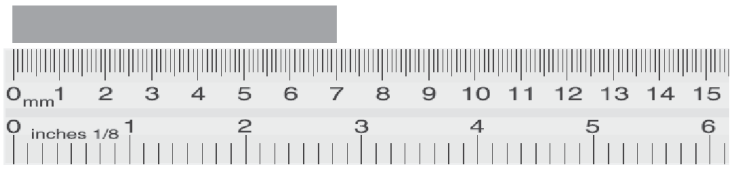
Test Prep 11.2

Do yourself.

Test Prep 11.3

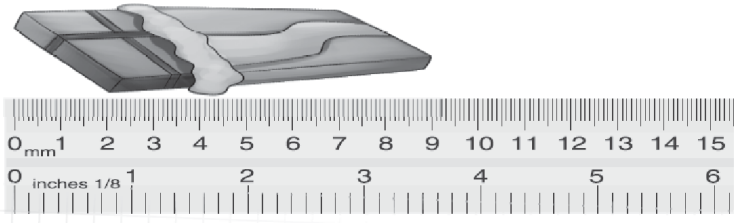
Q. Write the length of the following:

Sol. **1.**



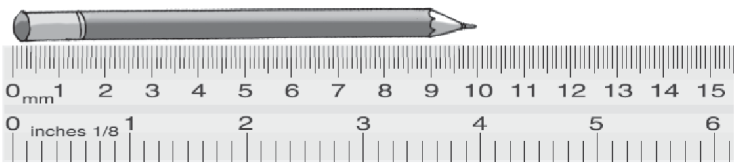
Crayon = 7 cm

2.



Chocolate = 9 cm

3.

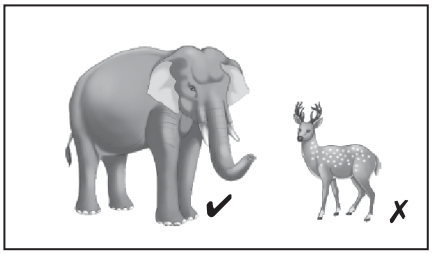


Pencil = 10 cm

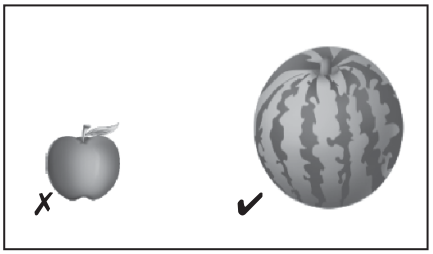
Test Prep 11.4

Q.1. Tick (✔) the heavier and cross (✗) the lighter:

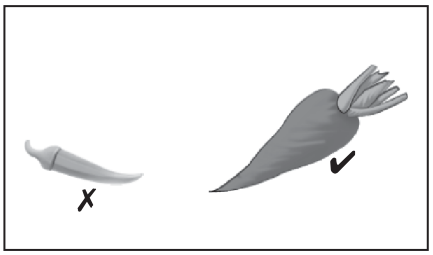
Sol. (a)



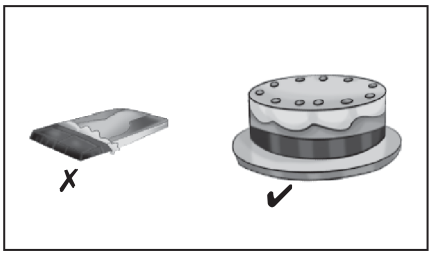
(b)



(c)

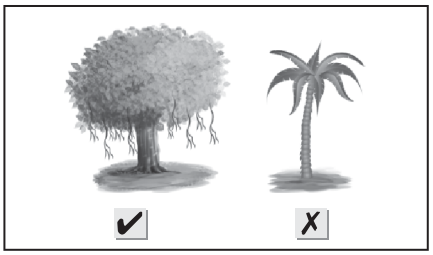


(d)

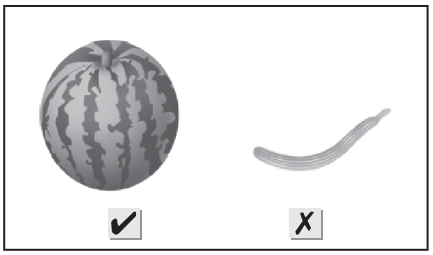


Q.2. Tick (✔) the thick object and cross (✗) the thin object:

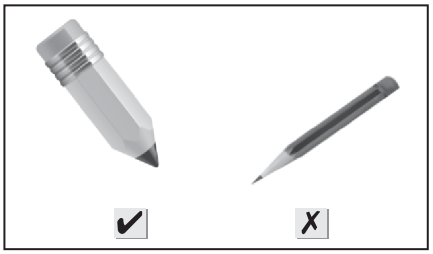
Sol. (a)



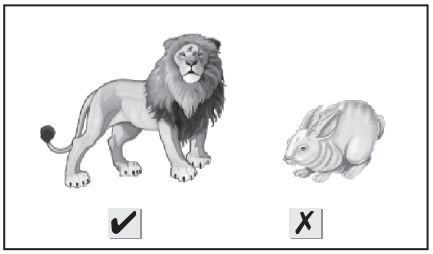
(b)



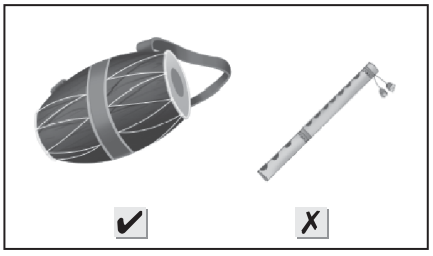
(c)



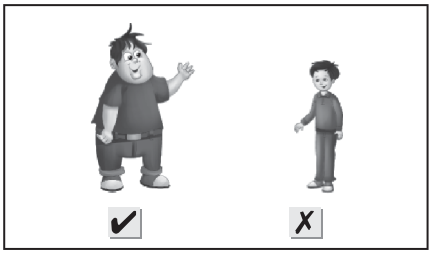
(d)



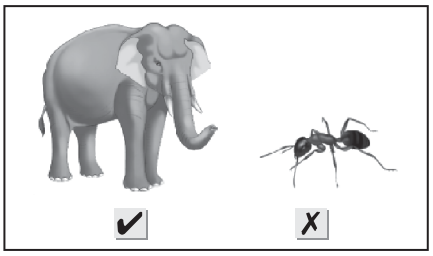
(e)



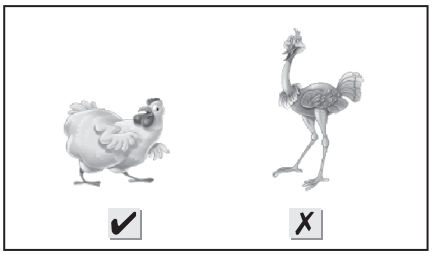
(f)



(g)



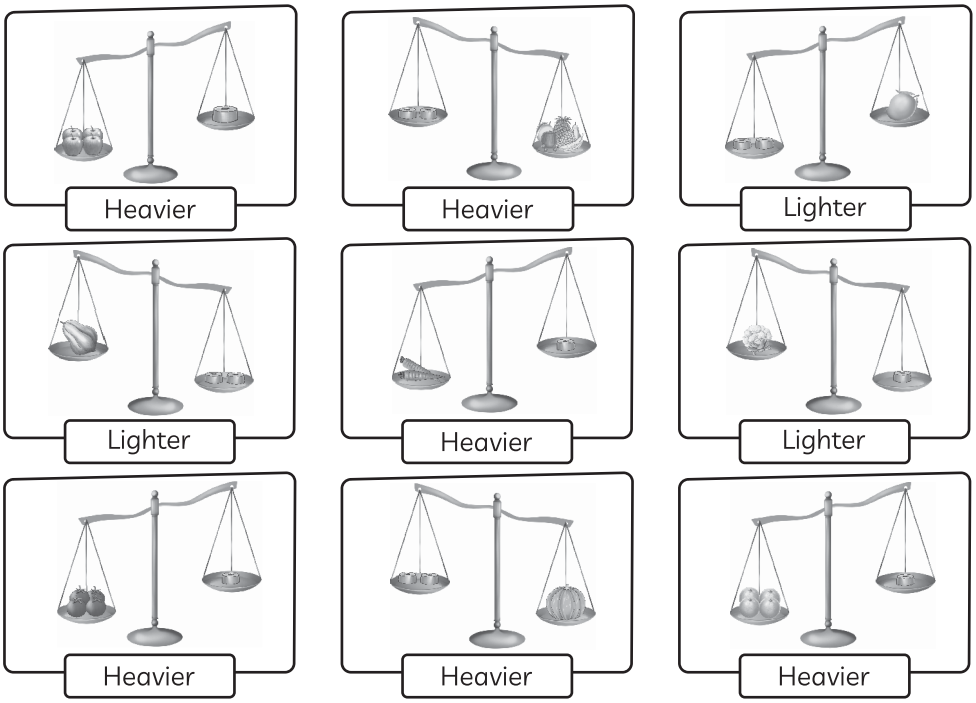
(h)



Test Prep 11.5

Q.1. Write whether the object is heavier or lighter than the weight:

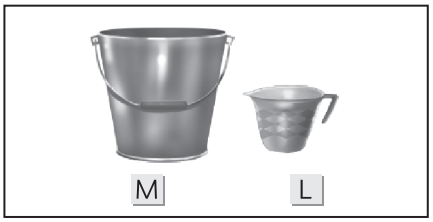
Sol.



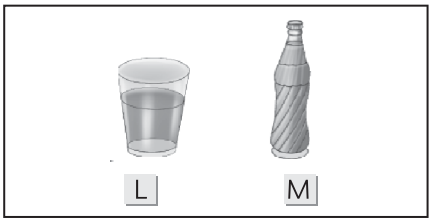
Test Prep 11.6

Q.1. Write M for the container which holds more and L for which holds less:

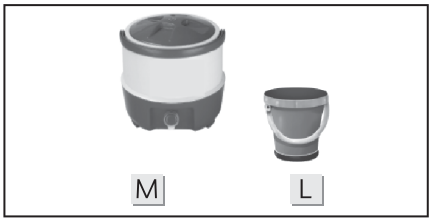
Sol. (a)



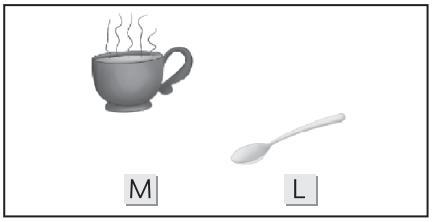
(b)



(c)



(d)



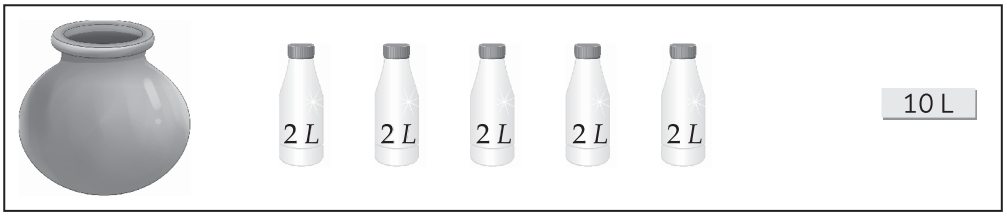
Test Prep 11.7

Q. Write the capacity of each container by adding the amount of bottles needed to fill it:

Sol. **1.**

2.

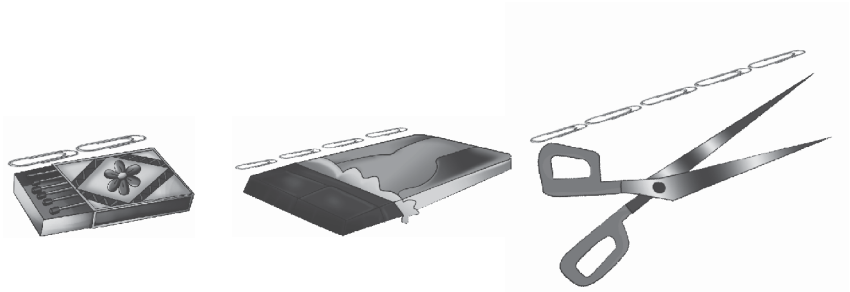
3.



4.

Maths Skills

Fill in the blanks:



Q.1. The scissor is longer tan matchbox by 3 clips.

Sol. ~~(a) 2~~ (b) 3 ✔ ~~(c) 4~~

Q.2. The total length of chocolate and scissor is 9 clips.

Sol. ~~(a) 6~~ ~~(b) 7~~ (c) 9 ✔

Look at the picture and answer the questions 3 to 5:

Q.3. The weight of apples is _1_ kg..

Sol. (a) 1 ✔ (b) ~~2~~ (c) ~~3~~

Q.4. Among tomatoes and crayons, the heaviest is:

Sol. (a) tomatoes ✔ (b) ~~crayons~~ (c) ~~none~~ of these

Q.5. Carrots are lighter than ladyfingers :

Sol. (a) ~~yes~~ (b) ~~no~~ (c) cannot tell ✔

Tick the correct answer :

Q.6. We find the length of our classroom with:

Sol. (a) ~~hand~~span (b) pace ✔ (c) ~~cubit~~

Q.7. We find the length of the blackboard with :

Sol. (a) handspan ✔ (b) ~~cubit~~ (c) ~~foot~~spam

Q.8. We find the length of thread used for flying kite:

Sol. (a) cubit ✔ (b) ~~foot~~span (c) ~~pace~~

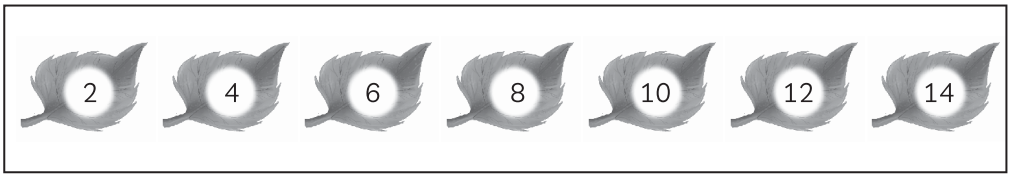
12. Skip Counting And Pattern

Test Prep 12.1

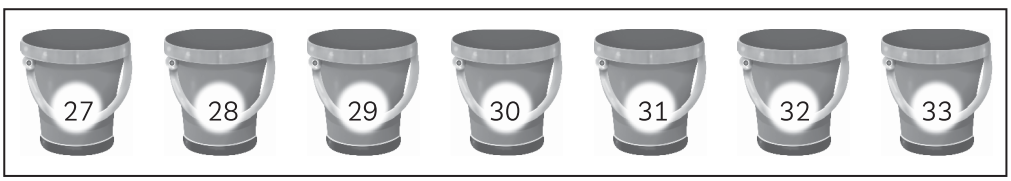
Q.1-2. Do yourself.

Q.3. Complete the pattern:

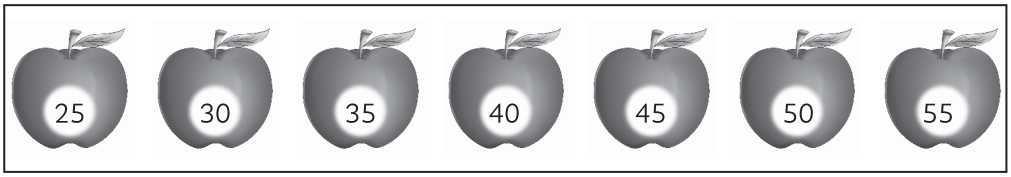
Sol. (a)



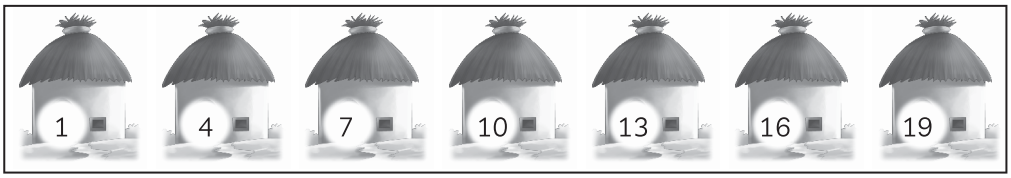
(b)



(c)

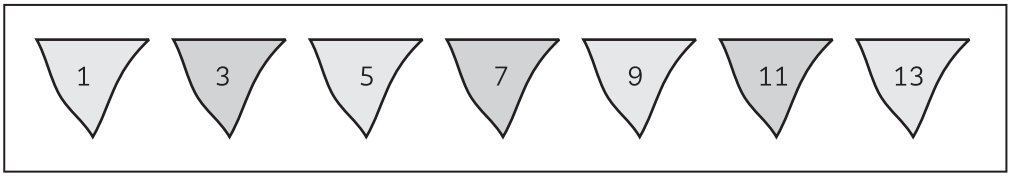


(d)

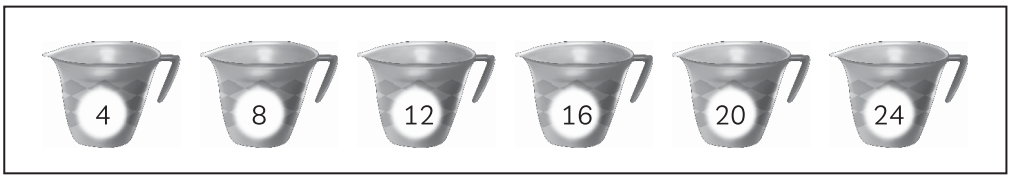


Q.4. Study the pattern and fill in the missing numbers:

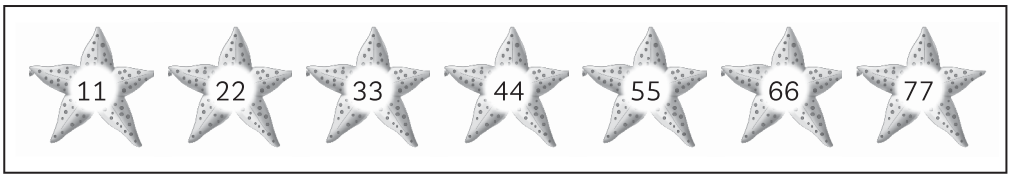
(a)



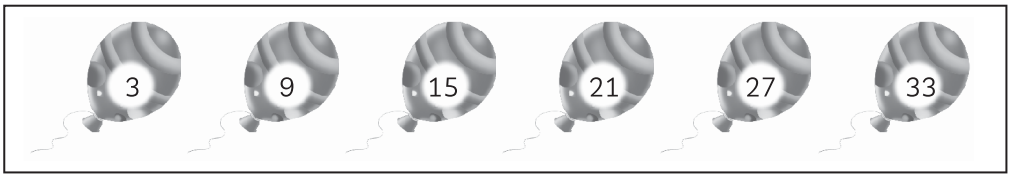
(b)



(c)



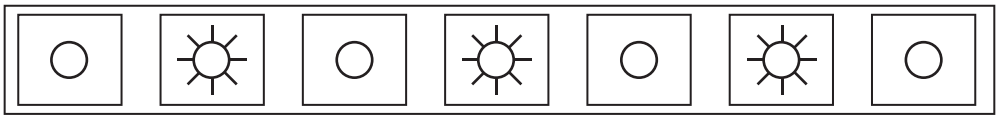
(d)



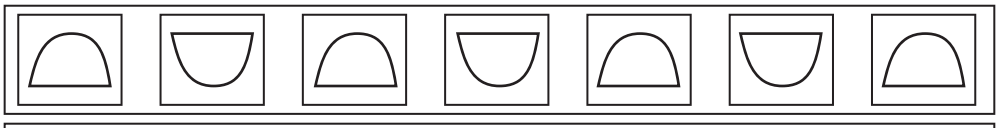
Test Prep 12.2

Q.1. What comes next in the sequence:

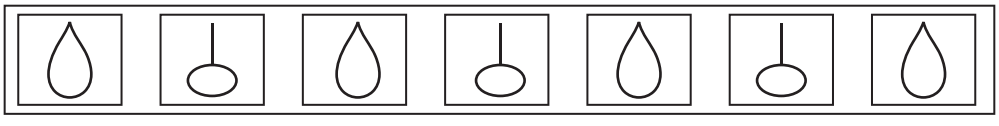
(a)



(b)



(c)

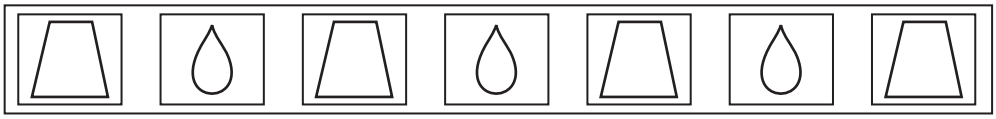


(d)

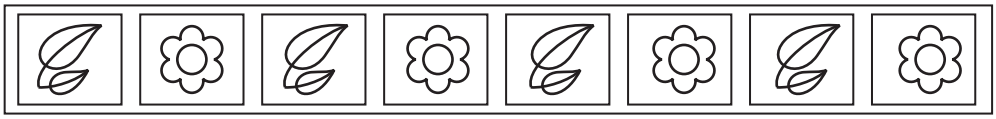
(e)

Q.2. Fill in the boxes in the sequence:

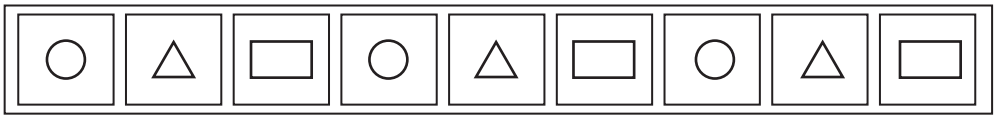
(a)



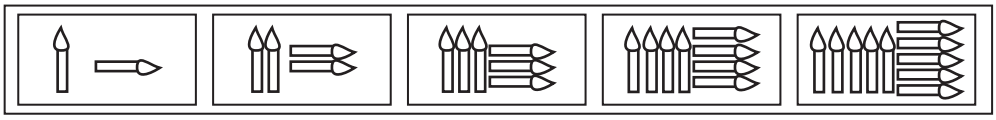
(b)



(c)



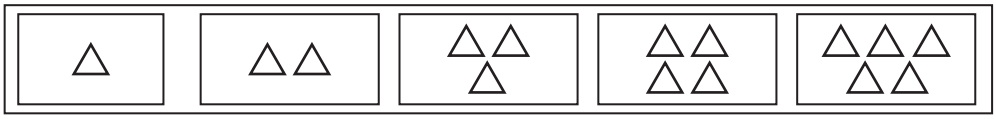
(d)



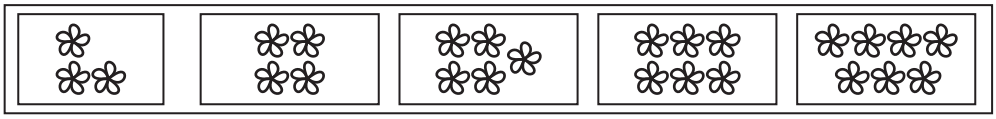
(e)

Q.3. Complete the pattern:

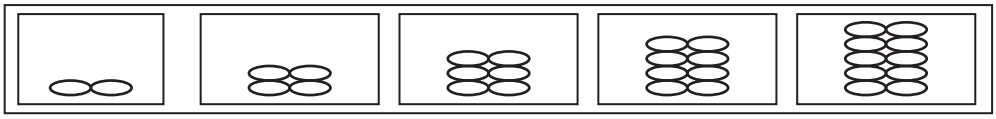
(a)



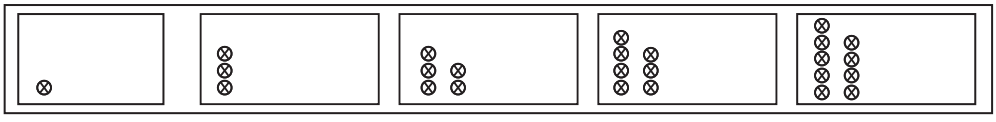
(b)



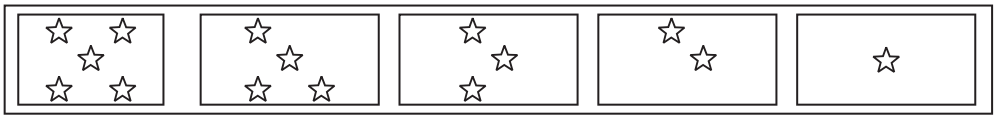
(c)



(d)



(e)



(f)

13. Time

Test Prep 13.1

Q.1. Look at the picture and write the part of the day for the activity shown below. Write 'M' for 'morning', 'A' for 'afternoon', 'E' for 'evening' and 'N' for 'night'.

Sol. (a)

M

(b)

M

(c)

M

(d)

A

(e)

E

(f)

E

(g)

N

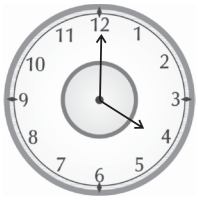
(h)

N

Test Prep 13.2

Q. Write the time shown by each of the following clocks. One has been done for you.

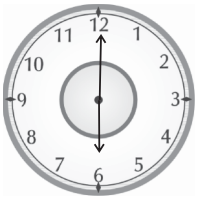
Sol. **1.**



4 o' clock

4 : 00

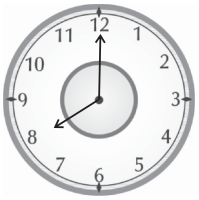
2.



6 o' clock

6 : 00

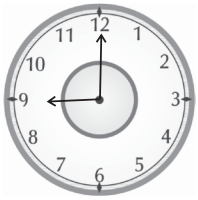
3.



8 o' clock

8 : 00

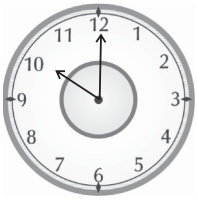
4.



9 o' clock

9 : 00

5.



10 o' clock

10 : 00

6.

12 o' clock

12 : 00

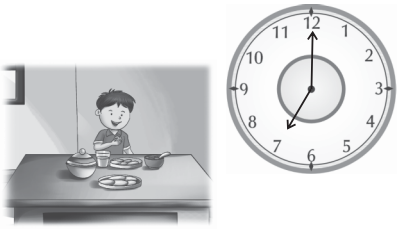
Test Prep 13.3

Q. Write the time shown by each of the following clocks. One has been done for you.

Sol. **1.**

up at **6 o'clock** in morning.

2.



I take my breakfast at 7 o' clock in the morning.

3.

I go to school at 8 o' clock in the morning.

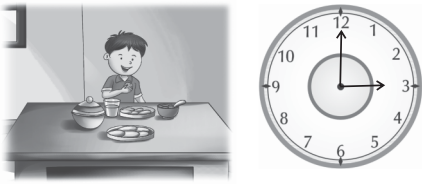
4.

It's break time in school at 10 o' clock.

5.

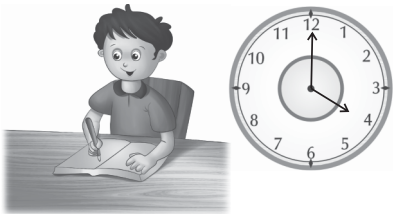
I come back home from school at 2 o' clock afternoon.

6.



I take lunch at 3 o' clock afternoon.

7.

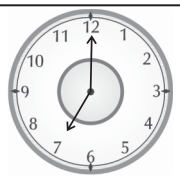


I do my home work up to 4 o' clock .

8.

I go to play at 5 o' clock .

9.



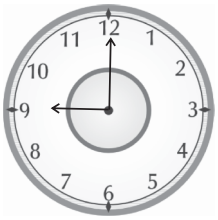
I watch T.V. at 7 o' clock
in the evening .

10.

I take my dinner at 8 o' clock
in the night.

11.

I go to bed at
9 o' clock .
in the night.



Test Prep 13.4

Q.1. Answer the following questions:

Sol.
(a) Which is the sixth day of the week? Saturday
(b) Which is the second day of the week? Tuesday
(c) Which day comes before Thursday? Wednesday
(d) Which day comes after Tuesday? Wednesday
(e) Which day lies in between Friday and Sunday? Saturday
(f) Which day lies in between Tuesday and Thursday? Wednesday
(g) Which day comes after Sunday? Monday

Q.2. Fill in the blanks:

Sol.
(a) There are seven days in a week.
(b) Monday is the first day of the week.
(c) Wednesday is the third day of the week.
(d) Fifth day of the week is friday .
(e) Sunday is the seventh day of the week.
(f) Saturday comes before sunday .
(g) Friday comes before saturday .
(h) Monday lies in between sunday and tuesday .
(i) Thursday lies in between wednesday and friday .
(j) Saturday is the sixth day of the week.

Test Prep 13.5

Q. Answer the following questions:

1.	How many months are there in a year?	Twelve
2.	Which is the first month of the year?	January
3.	Which month comes before February?	January
4.	Which month comes before March?	February
5.	Which month comes after May?	June
6.	Which month comes before June?	May
7.	Which month comes after October?	November
8.	Which month comes after August?	September
9.	Which month lies in between August and October?	September
10.	Which month comes in between July and September?	August
11.	Which is the sixth month of the year?	June
12.	Which is the eleventh month of the year?	November
13.	Which is the last month of the year?	December
14.	How many days are there in leap year?	29

Maths Olympiad

Q. Look at the calendar and tick (✔) the correct answer:

August						
Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

1. we celebrate Independence day in this month.

Sol. (a) Republic ☐
(b) Independence ✔
(c) Gandhi Jayanti ☐

2. The month starts on Saturday.

Sol. (a) Monday ☐ (b) Friday ☐ (c) Saturday ✔

3. The day of the circled date is Wednesday.

Sol. (a) Wednesday ✔ (b) Thursday ☐ (c) Friday ☐

4. The month that comes before August is July.

Sol. (a) June ☐ (b) July ✔ (c) September ☐

5. The correct way to write time is 7:00.

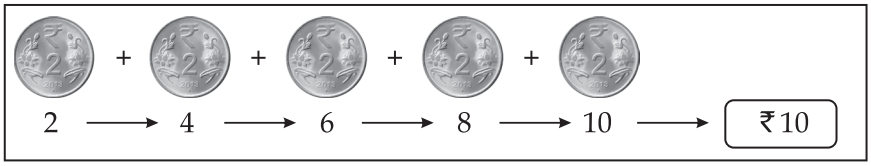
Sol. (a) 7:00 ✔ (b) 7.00 ☐ (c) Both are correct ☐

14. Money

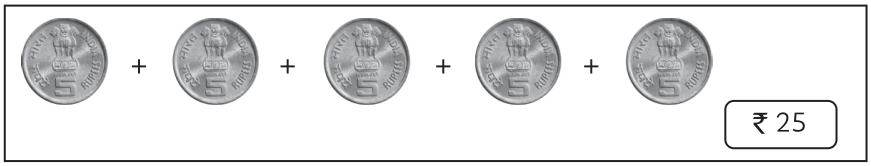
Test Prep 14.1

Q.1. Write the value of the following combinations of coins or notes. You can often use skip counting when you need to count money:

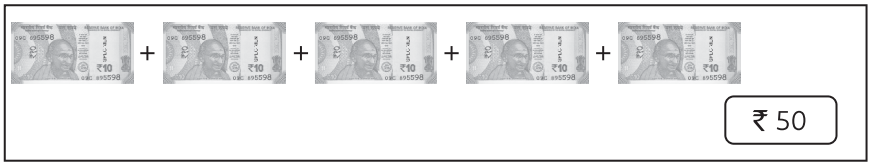
Sol. (a)



(b)

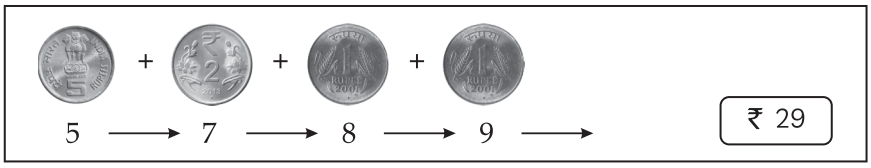


(c)

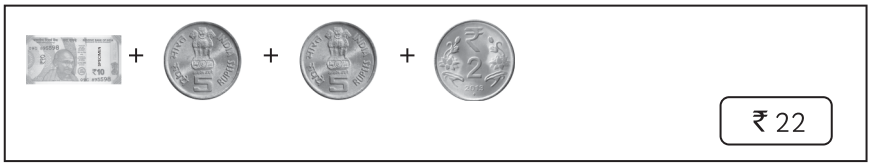


Q.2. What is total amount given below? When you have different amounts, start with biggest amount first:

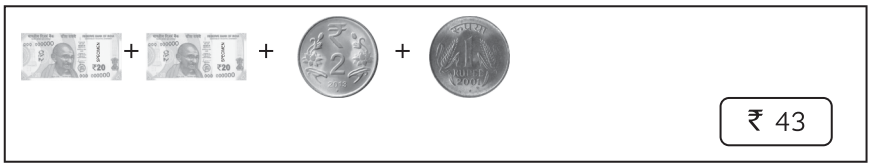
Sol. (a)



(b)



(c)



Q.3. Fill in te blanks:

Sol. (a)  = ₹ 3

(b)  = ₹ 4

(c)  = ₹ 1

(d)  = ₹ 8

Q.4. Count how much money:

Sol. (a)  = ₹ 35

(b)  = ₹ 13

(c)  = ₹ 9

(d)  = ₹ 26

(e)  = ₹ 36

(f)  = ₹ 77

Q.5. Match:

Sol. (a) 

(b) 

(c) 

(d) 

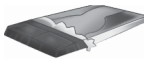
(e) 

Creative Activity

Q. Look at the price of the articles shown below:

Ice-cream
₹ 15

Cold drink
₹ 35

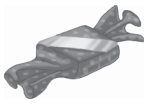


Chocolate
₹ 20

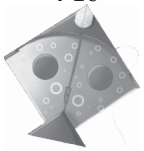
Marker pen
₹ 10

Balloon
₹ 5

Comb
₹ 10



Toffee
₹ 2



Kite
₹ 5

Q. Now, answer the following questions:

Sol. **1.** Pinki bought one cold drink, one marker pen and one balloon. How much money did she spend?

₹ 35 + ₹ 10 + ₹ 5 = ₹ 50

2. Nitin bought one chocolate, one comb and one ice-cream. How much money did he spand ?

₹ 20 + ₹ 10 + ₹ 15 = ₹ 45

3. Akash bought one ice-cream, one marker pen and one kite. How much money did he spend ?

₹ 15 + ₹ 10 + ₹ 5 = ₹ 30

4. Who spend the most money ?

₹ 50

5. Who spent the least money ?

₹ 30

15. Data Handing

Test Prep 15.1

Q. These children are friends:

Sol. **1.** Count number of letters in each name-word.

	Names	Number of letters
(a)	S A L M A ◯ ◯	5
(b)	J O S E P H ◯	6
(c)	A R U N ◯ ◯ ◯	4
(d)	C H I N T U ◯	6

(e) G E E T A ◯ ◯ — 5

(f) A S H A ◯ ◯ ◯ — 4

(g) S U B B U ◯ ◯ — 5

(h) A H M A D ◯ ◯ — 5

(i) R A V I ◯ ◯ ◯ — 4

2. How man names have four letters? Three

3. How man names have five letters? Four

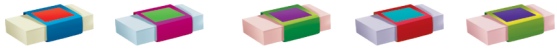
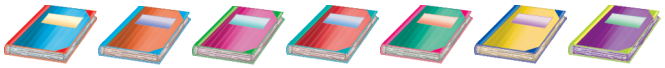
4. How many names have six letters? Two

5. How many times (S) comes in all the names taken together? Four

6. How many times (A) comes in all the names taken together? Nine

Pictograph

Look at the pictures given below. Here, figures of different objects are shown in tabular from. So, it is known as picture graph or pictograph.

Object	Number of objects
Football	
Pen	
Eraser	
Book	

Q. Count the number of each object in te above pictorograph and fill in the blanks:

Sol. **1.** There are six pens.

2. There are four footballs.

3. There are five erasers.

4. There are seven books.

5. Number of books are 3 more than the number of footballs.

Creative Activity

Q. Ask your friend which is his/her favourite pet. Find how many students like to keep the following animals as their pets.

Do yourself.

Time : 2 hours **Examination Preparation-II** M.M. : 80

Q.1. Tick (✔) the correct answer:

Sol. (a) Which of the following is the biggest animals?

~~ant~~ ~~horse~~ elephant ✔

(b) Which is the longest?

~~bus~~ ~~car~~ train ✔

(c) What does the long hand tells in the clock?

minutes ✔ ~~hours~~ ~~days~~

(d) What comes next the sequence 3, 6, 9, 12, 15 ?

~~13~~ ~~14~~ 15 ✔

Q.2. Fill in the blanks:

Sol. (a) The short hand on a clock is the hours hand.

(b) A week consist of seven days.

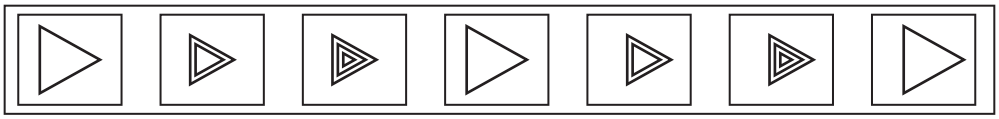
(c) We need money to buy thing.

(d) Tuesday comes after Wednesday.

Q.3. Complete each of the following patterns:

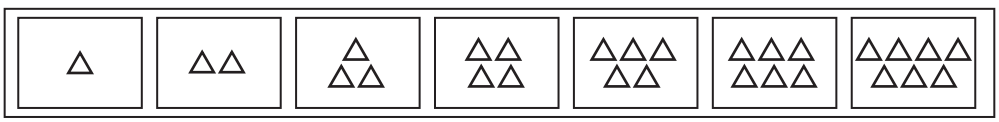
Sol. (a)

(b)



(c)

(d)



Q.4. Count the number of fruits and vegetables of each type in the given pictograph and fill in the blanks:

Item	Number of items
Carrots	
Mangoes	
Potatoes	
Oranges	
Apples	

(a) How many orange are there? 5

(b) How many patatoes are there? 7

(c) How many apples are there? 6

(d) How many carrots are there? 5

(e) How many mangoes are there? 3

(f) Which is maximum in number? Patatoes

(g) Which is minimum in number? Mangoes

Q.5. What is total amount?

Sol. (a)  = ₹ 19

(b)  = ₹ 50

(f)  = ₹ 100

(d)  = ₹ 90

Q.6. How many numbers are there on the face of clock?

Sol. Twelve

Q.7. How many days are there in a week?

Sol. 7

Q.8. Given below are the names of different animals. Count the letters in each name:

MONKEY	6		GIRAFFE	7	
ANTEATER	8	DOG	3	BEAR	4

Answer the following questions?

Sol. (a) How many 'E' are there in all the names? 5

(b) How many 'R' are there in all the names? 3

(c) How many 'A' are there in all the names? 4

(d) How many 'B' are there in all the names? 1

Chapter-1 Reminder of Pre-Class

Sol.1. (a) 24 = Twenty-four
(b) 81 = Eighty-one
(c) 66 = Sixty-six
(d) 93 = Ninety-three
(e) 38 = Thirty-eight
(f) 49 = Forty-nine

Sol.2. (a) Twenty-five 25
(b) Thirty 30
(c) Eighty-five 85
(d) Ninety-nine 99
(e) Sixty-seven 67
(f) seventy-eight 78

Sol.3. (a) [32] is before 33.
(b) 41 is after [40].
(c) 48 is before [49].
(d) [87] is after 86.
(e) 83 is before [84].
(f) [98] is after 97.
(g) [88] is between 87 and 89.
(h) [78] is between 77 and 79.

Sol.4. (a) Forty-five is greater than thirty-nine.
45 > 39
(b) Eight-four is less than ninety-three.
84 < 93
(c) Sixty-five is greater than thirty-one.
65 > 31
(d) Seventy-eight is greater than fifty-one.
78 > 51
(e) Sixty is less than eighty-seven. 60 < 87
(f) One hundred is greater than ninety-eight.
100 > 98

Sol.5. (a) 48 [>] 42 (b) 63 [<] 66
(c) 98 [=] 98 (d) 73 [>] 69
(e) 85 [<] 97 (f) 75 [>] 63
(g) 41 [<] 53 (h) 99 [=] 99
(i) 67 [<] 71

Sol.6. (a) 59, 38, 48, 39, 30, 49 30, 38, 39, 48, 49, 59
(b) 62, 74, 76, 86, 84, 82 62, 74, 76, 82, 84, 86
(c) 36, 63, 39, 46, 76, 53 36, 39, 46, 53, 63, 76

Sol.7. (a) 50, 78, 65, 37, 87, 58 87, 78, 65, 58, 50, 37
(b) 26, 45, 67, 29, 13, 52 67, 52, 45, 29, 26, 13
(c) 62, 36, 66, 27, 54, 48 66, 62, 54, 48, 36, 27

Sol.8.

[37]	[18]	[28]	[89]	[45]	[71]	[63]	[21]
W	H	I	S	D	A	N	C

89	71	63	45	37	28	21	18
[S]	[A]	[N]	[D]	[W]	[I]	[C]	[H]

Sol.9. (a)
T	O
4	2
+ 1	7
5	9

(b)
T	O
2	5
+ 2	3
4	8

(c)
T	O
2	6
+ 7	1
9	7

(d)
T	O
3	5
+ 3	2
6	7

(e)
T	O
□	□
7	4
+ 1	9
9	3

(f)
T	O
□	□
3	9
+ 1	3
5	2

(g)
T	O
□	□
4	8
+ 2	7
7	5

(h)
T	O
□	□
2	6
+ 5	2
8	2

Sol.10. (a)
T	O
8	4
− 2	4
6	0

(b)
T	O
5	6
− 3	0
2	6

(c)
T	O
6	2
− 3	2
3	0

(d)
T	O
7	6
− 4	5
3	1

(e)
T	O
□	□
6	2
− 3	6
2	6

(f)
T	O
□	□
4	4
− 2	8
1	6

(g) T O

$$\begin{array}{r} \square\square \\ 7\ 1 \\ -\ 5\ 6 \\ \hline 1\ 5 \end{array}$$

(h) T O

$$\begin{array}{r} \square\square \\ 9\ 3 \\ -\ 8\ 8 \\ \hline 0\ 5 \end{array}$$

Sol.11. (a) $3 \times 7 = 21$ (b) $4 \times 8 = 32$
(c) $5 \times 6 = 30$ (d) $4 \times 9 = 36$
(e) $2 \times 10 = 20$ (f) $3 \times 9 = 27$

Sol.12. (a) Third day of the week is Wednesday.
(b) First day of the week is Monday.
(c) June comes before July.
(d) June comes after May.

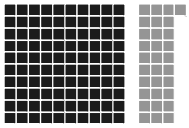
Sol.13. (a)  5 o'clock

(b)  8 o'clock

(c)  3 o'clock

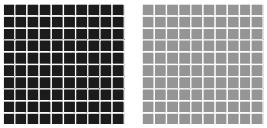
Chapter-2
Numbers Up to 1000

Test Prep 2.1

Sol.1. (a) 

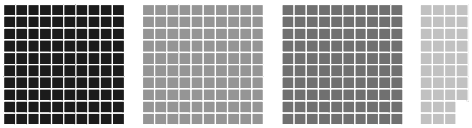
One hundred thirty-one 131

H	T	O
1	3	1

(b) 

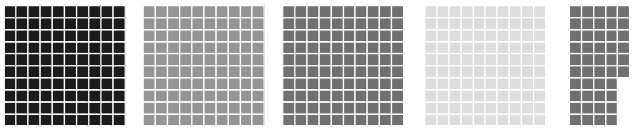
Two Hundred 200

H	T	O
2	0	0

(c) 

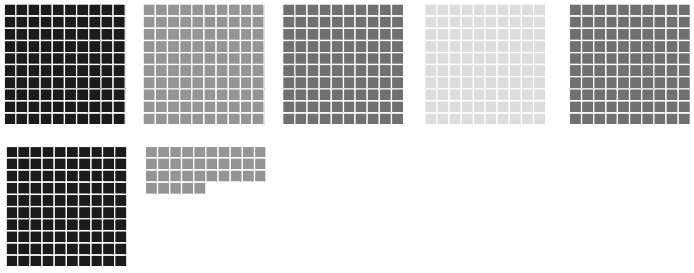
Three hundred thirty-eight 338

H	T	O
3	3	8

(d) 

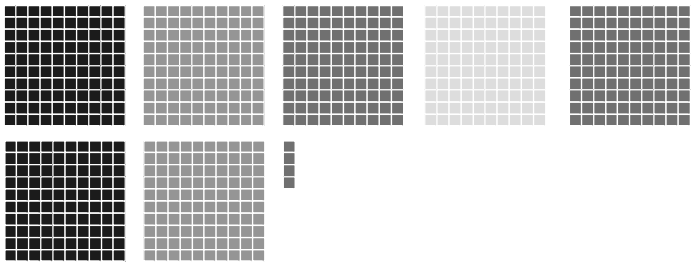
Four hundred forty-six 446

H	T	O
4	4	6

(e) 

Six hundred thirty-five 635

H	T	O
6	3	5

(f) 

H	T	O
7	0	4

Seven hundred four 704

Sol.2.

101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200

Sol.3.

201	202	203	204	205	206	207	208	209	210
211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250
251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270
271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290
291	292	293	294	295	296	297	298	299	300

Sol.4.

301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400

Sol.5.

401	402	403	404	405	406	407	408	409	410
411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430
431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450
451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470
471	472	473	474	475	476	477	478	479	480
481	482	483	484	485	486	487	488	489	490
491	492	493	494	495	496	497	498	499	500

Sol.6.

501	502	503	504	505	506	507	508	509	510
511	512	513	514	515	516	517	518	519	520
521	522	523	524	525	526	527	528	529	530
531	532	533	534	535	536	537	538	539	540
541	542	543	544	545	546	547	548	549	550
551	552	553	554	555	556	557	558	559	560
561	562	563	564	565	566	567	568	569	570
571	572	573	574	575	576	577	578	579	580
581	582	583	584	585	586	587	588	589	590
591	592	593	594	595	596	597	598	599	600

Sol.7.

601	602	603	604	605	606	607	608	609	610
611	612	613	614	615	616	617	618	619	620
621	622	623	624	625	626	627	628	629	630
631	632	633	634	635	636	637	638	639	640
641	642	643	644	645	646	647	648	649	650
651	652	653	654	655	656	657	658	659	660
661	662	663	664	665	666	667	668	669	670
671	672	673	674	675	676	677	678	679	680
681	682	683	684	685	686	687	688	689	690
691	692	693	694	695	696	697	698	699	700

Sol.8.

701	702	703	704	705	706	707	708	709	710
711	712	713	714	715	716	717	718	719	720
721	722	723	724	725	726	727	728	729	730
731	732	733	734	735	736	737	738	739	740
741	742	743	744	745	746	747	748	749	750
751	752	753	754	755	756	757	758	759	760
761	762	763	764	765	766	767	768	769	770
771	772	773	774	775	776	777	778	779	780
781	782	783	784	785	786	787	788	789	790
791	792	793	794	795	796	797	798	799	800

Sol.9.

801	802	803	804	805	806	807	808	809	810
811	812	813	814	815	816	817	818	819	820
821	822	823	824	825	826	827	828	829	830
831	832	833	834	835	836	837	838	839	840
841	842	843	844	845	846	847	848	849	850
851	852	853	854	855	856	857	858	859	860
861	862	863	864	865	866	867	868	869	870
871	872	873	874	875	876	877	878	879	880
881	882	883	884	885	886	887	888	889	890
891	892	893	894	895	896	897	898	899	900

Sol.10.

901	902	903	904	905	906	907	908	909	910
911	912	913	914	915	916	917	918	919	920
921	922	923	924	925	926	927	928	929	930
931	932	933	934	935	936	937	938	939	940
941	942	943	944	945	946	947	948	949	950
951	952	953	954	955	956	957	958	959	960
961	962	963	964	965	966	967	968	969	970
971	972	973	974	975	976	977	978	979	980
981	982	983	984	985	986	987	988	989	990
991	992	993	994	995	996	997	998	999	1000

Test Prep 2.2

Sol.1. (a) Four hundred seventy-eight 478
(b) Two hundred ninety-two 292
(c) One hundred twenty 120
(d) Four hundred eighty-three 483
(e) Four hundred seventeen 417
(f) Seven hundred fifty-nine 759
(g) Five hundred fifty-five 555
(h) Eight hundred one 801
(i) Seven hundred sixty-six 766
(j) Nine hundred fifty 950
(k) Nine hundred forty 940
(l) Four hundred eighty-eight 488
(m) Six hundred ten 610
(n) Eight hundred four 804

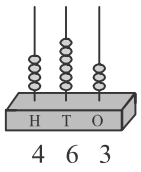
Sol.2. (a) 481 Four hundred eighty-one
(b) 546 Five hundred forty-six
(c) 378 Three hundred seventy-eight
(d) 625 Six hundred twenty-five
(e) 249 Two hundred forty-nine
(f) 447 Four hundred forty-seven
(g) 960 Nine hundred sixty
(h) 532 Five hundred thirty-two
(i) 673 Six hundred Seventy three
(j) 729 Seven hundred twenty-nine
(k) 925 Nine hundred twenty-five
(l) 883 Eight hundred eighty-three
(m) 764 Seven hundred sixty-four
(n) 966 Nine hundred sixty-six
(o) 567 Five hundred sixty seven
(p) 790 Seven hundred ninety.

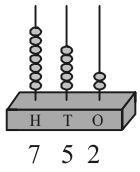
Sol.3. (a) 172 173 (b) 404 405 (c) 609 610
(d) 908 909 (e) 348 349 (f) 875 876
(g) 242 243 (h) 389 390 (i) 399 400
(j) 416 417 (k) 529 530 (l) 777 778
(m) 926 927 (n) 198 199 (o) 700 701
(p) 251 252

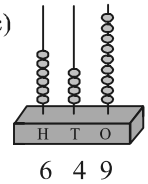
Sol.4. (a) 415 [416] (b) 790 [791] (c) 599 [600]
(d) 901 [902] (e) 474 [475] (f) 269 [270]
(g) 803 [804] (h) 244 [245] (i) 909 [910]
(j) 547 [548] (k) 300 [301] (l) 750 [751]
(m) 989 [990] (n) 665 [666] (o) 236 [237]
(p) 998 [999]

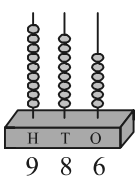
Sol.5. (a) 399 [400] 401 (b) 745 [746] 747
(c) 630 [631] 632 (d) 833 [834] 835
(e) 444 [445] 446 (f) 257 [258] 259
(g) 336 [337] 338 (h) 590 [591] 592
(i) 409 [410] 411 (j) 701 [702] 703
(k) 655 [656] 657 (l) 900 [901] 902

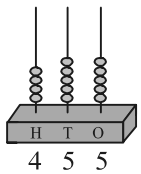
Test Prep 2.3

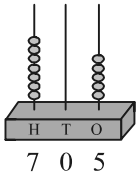
Sol.1. (a) 

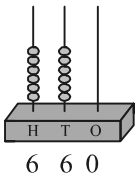
(b) 

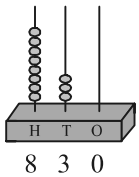
(c) 

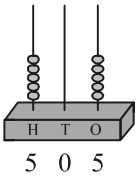
(d) 

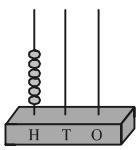
(e) 

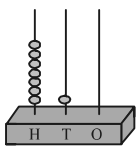
(f) 

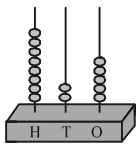
(g) 

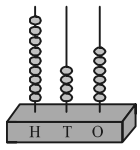
(h) 

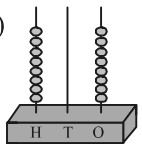
(i) 

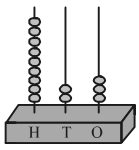
Sol.2. (a) 

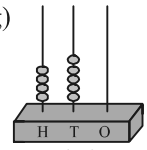
(b) 

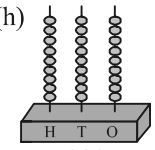
(c) 

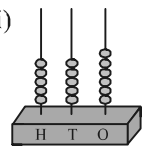
(d) 

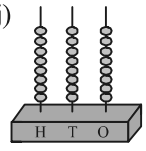
(e) 

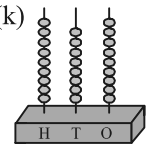
(f) 

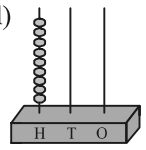
(g) 

(h) 

(i) 

(j) 

(k) 

(l) 

Test Prep 2.4

Sol.1.

Number	Face Value	Place Value
(a) 573	[5]	[500]
(b) 573	[7]	[70]
(c) 573	[3]	[3]
(d) 689	[6]	[600]
(e) 689	[8]	[80]

(f) 689	9	9
(g) 413	3	3
(h) 413	1	10
(i) 413	4	400
(j) 856	8	800
(k) 856	5	50
(l) 856	6	6

Sol.2. (a) 2 3 5 → 200 30 5 (b) 1 7 8 → 100 70 8

(c) 3 4 9 → 300 40 9 (d) 4 5 6 → 400 50 6

(e) 6 0 3 → 600 0 3 (f) 8 1 0 → 800 10 0

Sol.3. (a) The place value of 6 in 675 and 632 is 6 hundreds

(b) The place value of 7 in 873 and 971 is 7 tens

(c) The place value of 8 in 938 and 548 is 8 ones

(d) The place value of 5 in 520 and 541 is 5 hundreds

Test Prep 2.5

Sol.1. (a) 258 = 2 hundreds + 5 tens + 8 ones
= 200 + 50 + 8

(b) 325 = 3 hundreds + 2 tens + 5 ones
= 300 + 20 + 5

(c) 596 = 5 hundreds + 9 tens + 6 ones
= 500 + 90 + 6

(d) 433 = 4 hundreds + 3 tens + 3 ones
= 400 + 30 + 3

(e) 663 = 6 hundreds + 6 tens + 3 ones
= 600 + 60 + 3

(f) 820 = 8 hundreds + 2 tens + 0 ones
= 800 + 20 + 0

(g) 901 = 9 hundreds + 0 tens + 1 ones
= 900 + 0 + 1

(h) 587 = 5 hundreds + 8 tens + 7 ones
= 500 + 80 + 7

(i) 604 = 6 hundreds + 0 tens + 4 ones
= 600 + 0 + 4

Sol.2. (a) 4 hundreds + 7 tens + 3 ones = 473

(b) 600 + 10 + 7 = 617

(c) 3 hundreds + 6 tens = 360

(d) 500 + 8 = 508

(e) 1 hundreds + 9 tens + 2 ones = 192

(f) 800 + 30 = 830

(g) 6 hundreds + 4 tens + 5 ones = 645

(h) 700 + 9 = 709

(i) 9 hundreds + 6 tens + 4 ones = 964

(j) 400 + 40 + 4 = 444

(k) 5 hundreds + 7 tens + 3 ones = 573

(l) 200 + 50 + 6 = 256

Test Prep. 2.6

Sol.1. (a) 450 (456) (b) 792 (983)

(c) (259) 251 (d) (773) 573

(e) 536 (563) (f) 219 (354)

(g) (351) 94 (h) 38 (270)

(i) (250) 98 (j) (402) 304

(k) (762) 724 (l) 345 (435)

Sol.2. (a) 653 (96) (b) 674 (542)

(c) (539) 662 (d) (425) 452

(e) 856 (84) (f) (85) 847

(g) 254 (154) (h) (53) 661

(i) 790 (709) (j) (984) 989

(k) (491) 493 (l) (760) 768

Sol.3. (a) 273 723 237 (732)

(b) 625 256 (651) 523

(c) (431) 341 134 234

(d) 386 (863) 638 683

(e) 629 562 269 (926)

(f) 578 (857) 537 758

Sol.4. (a) 541 145 154 (35)

(b) 504 (405) 450 540

(c) (247) 742 724 274

(d) 391 (193) 319 913

(e) 735 753 (357) 537

(f) 861 (267) 683 628

Test Prep. 2.7

Sol.1. (a) 385, 721, 456, 712 = 385, 456, 712, 721
(b) 678, 768, 876, 687 = 678, 687, 768, 876
(c) 785, 568, 658, 865 = 568, 658, 785, 865
(d) 821, 218, 720, 481 = 218, 481, 720, 821
(e) 259, 648, 175, 312 = 175, 259, 312, 648

Sol.2. (a) 234, 423, 324, 196 = 423, 324, 234, 196
(b) 240, 360, 180, 290 = 360, 290, 240, 180
(c) 367, 419, 176, 637 = 637, 419, 367, 176
(d) 520, 479, 602, 398 = 602, 520, 479, 398
(e) 635, 536, 356, 563 = 635, 563, 536, 356

Test Prep 2.8

Sol.1. (a) 4, 7, 5 = 475, 457, 547, 574, 754, 745
(b) 3, 5, 8 = 358, 385, 538, 583, 835, 853
(c) 9, 2, 0 = 920, 902, 290, 209
(d) 6, 0, 1 = 601, 610, 106, 160

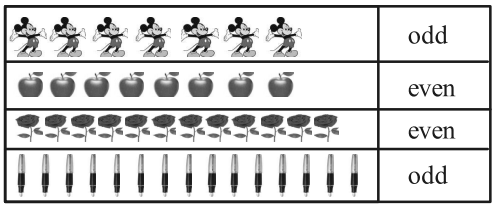
Sol.2.

	Greatest Number	Smallest Number
(a) 2, 1, 6	621	126
(b) 8, 0, 3	830	308
(c) 4, 7, 2	742	247
(d) 3, 9, 8	983	389

Test Prep. 2.9

1. Do yourself.

Sol.2.



Test Prep 2.10

Sol.1. (a) Fifth

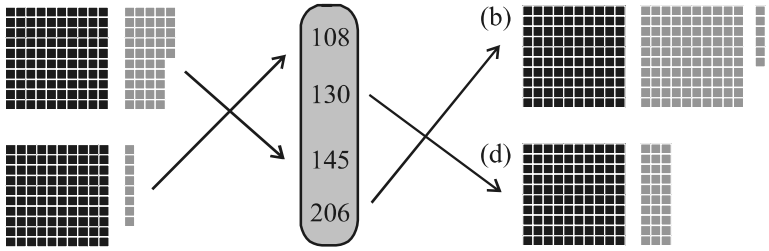
(b) Eighth

Sol.2.

Sol.3. (a) The position of L in the word SCHOOL is sixth.
(b) The position of T in the word ELEPHANT is eighth.
(c) The position of B in the word TABLE is third.
(d) The position Y in the MONDAY is 6th.
(e) The position of E in the word TIGER is 4th.

Maths Skills

Sol.1.

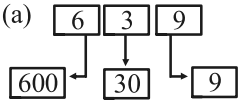


Sol. 2.

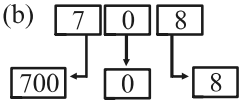
(a) Two hundred sixteen	216
(b) One hundred two	102
(c) Three hundred forty-two	342
(d) Five hundred ninty	590
(e) Six hundred sixty-six	666
(f) Eight hundred twenty-one	821

Sol. 3. (a) 267 = Two hundred Sixty-seven
(b) 368 = Three hundred Sixty-eight
(c) 589 = Five hundred eighty-nine
(d) 670 = Six hundred seventy
(e) 704 = Seven hundred four
(f) 888 = Eight hundred eighty-eight

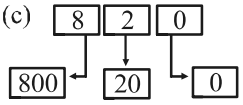
Sol.4. (a)



(b)



(c)



Sol. 5. (a) 238 [2] (b) 490 [0]
(c) 508 [8]

Sol.6. (a) 21 [<] 29 (b) 63 [>] 43
(c) 27 [=] 27 (d) 96 [>] 72
(e) 45 [=] 45 (f) 29 [<] 45
(g) 39 [=] 39 (h) 97 [<] 99
(i) 95 [>] 81

Sol.7. (a) 824, 646, 788, 642 642, 646, 788, 824
(b) 480, 448, 484, 594 448, 480, 484, 594
(c) 689, 686, 668, 788 668, 686, 689, 788
(d) 881, 827, 843, 987 827, 843, 881, 987

Sol.8. (a) 397, 524, 498, 726 726, 524, 498, 397
(b) 641, 682, 475, 843 843, 682, 641, 475
(c) 784, 901, 600, 972 972, 901, 784, 600
(d) 432, 568, 370, 681 681, 568, 432, 370

Sol.9. (a) 763 = 700 + 60 + 3
(b) 540 = 500 + 40 + 0
(c) 809 = 800 + 0 + 9
(d) 978 = 900 + 70 + 8

Sol.10. (a) 300 + 70 + 9 = 379 (b) 900 + 90 = 990
(c) 400 + 6 = 406 (d) 800 + 30 + 4 = 834

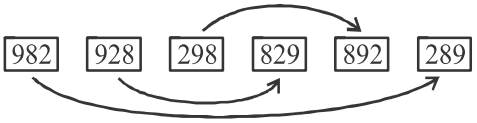
Sol.11. (a) 2, 4, 8, 842, 248 (b) 6, 0, 3, 603, 306
(c) 6, 5, 9, 659, 569

Sol.12. (a) 836 is greater than 863. F
(b) Place value of 6 in 762 is 600. F
(c) 51 ones is same as 5 tens. F
(d) The place value and face value of 7 in 567 and 738 is same. F
(e) The place value and face value of 8 in 238 and 458 is same. T

Creative Activity

Sol.1.
- I am a three-digit number. I have 5 in my tens place. other two digits are 9 and 7. I am more than 800. I am 957 .
- If you add 1 in me, I will become 1000. I am 999 .

Sol.2.



Maths Olympiad

Sol. 1. (c) 10 hundreds.
Sol. 2. (c) 50.
Sol. 3. (b) 349.
Sol. 4. (c) 807.
Sol. 5. (a) 391.
Sol. 6. (b) < .
Sol. 7. (b) 807.
Sol. 8. (a) 0.

Chapter-3
Addition

Test Prep 3.1

Sol. 1.(a)

H	T	O
2	5	8
+ 3	4	1
5	9	9

(b)

H	T	O
6	4	6
+ 2	1	3
8	5	9

(c)

H	T	O
1	8	6
+ 8	1	2
9	9	8

(d)

H	T	O
4	3	2
+ 2	6	3
6	9	5

(e)

H	T	O
6	7	0
+ 3	2	5
9	9	5

(f)

H	T	O
4	5	2
+ 3	4	7
7	9	9

(g)

H	T	O
6	3	5
+ 2	6	4
8	9	9

(h)

H	T	O
2	3	0
+ 7	0	5
9	3	5

(i)

H	T	O
7	2	4
+ 2	5	2
9	7	6

(j)

H	T	O
2	8	3
+ 5	0	6
7	8	9

(k)

H	T	O
7	0	8
+ 2	7	1
9	7	9

(l)

H	T	O
4	6	6
+ 5	1	3
9	7	9

Sol.2. (a)

H	T	O
3	0	3
+ 1	4	4
4	4	7

(b)

H	T	O
3	3	0
+ 2	5	0
5	8	0

(c)

H	T	O
4	3	2
+ 5	6	5
9	9	7

(d)

H	T	O
2	5	0
+ 7	3	5
9	8	5

(e)

H	T	O
4	5	1
+ 2	2	6
6	7	7

(f)

H	T	O
4	3	0
+ 5	4	5
9	7	5

(g)
H	T	O
	4	2	4
+	3	3	4
	7	5	8

(h)
H	T	O
	5	2	4
+	4	2	4
	9	4	8

(i)
H	T	O
	7	2	9
+	1	4	0
	8	6	9

(j)
H	T	O
	3	9	9
+	4	0	0
	7	9	9

(k)
H	T	O
	5	7	3
+	4	2	6
	9	9	9

(l)
H	T	O
	5	2	0
+	2	6	0
	7	8	0

(m)
H	T	O
	4	9	7
+	5	0	2
	9	9	9

(n)
H	T	O
	3	6	4
+	3	3	3
	6	9	7

(o)
H	T	O
	3	3	3
+	6	6	6
	9	9	9

(p)
H	T	O
	6	0	9
+	2	9	0
	8	9	9

(q)
H	T	O
	5	4	4
+	2	0	4
	7	4	8

(r)
H	T	O
	2	2	9
+	3	7	0
	5	9	9

(s)
H	T	O
	4	4	4
+	5	5	5
	9	9	9

(t)
H	T	O
	6	6	2
+	3	3	3
	9	7	5

Test prep 3.2

Sol.1.(a)
H	T	O
	4	2	1
	2	0	5
+	1	6	1
	7	8	7

(b)
H	T	O
	2	2	4
	4	3	4
+	3	0	0
	9	5	8

(c)
H	T	O
	5	0	1
	2	6	3
+	1	3	5
	8	9	9

(d)
H	T	O
	7	2	9
	1	0	0
+	1	5	0
	9	7	9

(e)
H	T	O
	1	2	3
	3	2	2
+	3	4	0
	7	8	5

(f)
H	T	O
	5	4	2
	1	0	1
+	2	4	5
	8	8	8

(g)
H	T	O
	5	0	3
	2	4	1
+		5	4
	7	9	8

(h)
H	T	O
	1	9	5
	1	0	3
+	2	0	1
	4	9	9

(i)
H	T	O
	3	1	4
	2	3	1
+	1	4	2
	6	8	7

Test prep 3.3

Sol.1.(a)
T	O
	[1]
	4	6
+	3	7
	8	3

(b)
T	O
	[1]
	3	9
+	5	8
	9	7

(c)
T	O
	[1]
	6	7
+	2	5
	9	2

(d)
T	O
	[1]
	4	8
+	4	7
	9	5

(e)
T	O
	[1]
	3	6
+	5	4
	9	0

(f)
T	O
	[1]
	2	9
+	6	8
	9	7

(g)
T	O
	[1]
	5	9
+	3	9
	9	8

(h)
T	O
	[1]
	6	3
+	2	9
	9	2

(i)
T	O
	[1]
	6	6
+	2	5
	9	1

(j)
T	O
	[1]
	5	5
+	3	7
	9	2

(k)
T	O
	[1]
	7	9
+	1	6
	9	5

(l)
T	O
	[1]
	5	9
+	2	1
	8	0

(m)
	T	O
	[2]	
	1	7
	3	6
+	2	9
	8	2

(n)
	T	O
	[1]	
	3	7
	2	6
+	3	5
	9	8

(o)
	T	O
	[2]	
	4	9
	1	8
+	2	6
	9	3

(p)
	T	O
	[1]	
	1	8
	2	4
+	5	7
	9	9

(q)
	T	O
	[1]	
	5	7
	2	8
+	1	4
	9	9

(r)
	T	O
	[2]	
	1	3
	2	8
+	3	9
	8	0

(s)
	T	O
	[1]	
	4	5
	3	6
+	1	8
	9	9

(t)
	T	O
	[1]	
	2	7
	1	6
+	4	6
	8	9

Sol.2.(a)
	H	T	O
	[1]	[1]	
		4	3
+		7	7
	1	2	0

(b)
	H	T	O
	[1]	[1]	
		5	7
+		8	4
	1	4	1

(c)
	H	T	O
	[1]	[1]	
		9	8
+		5	4
	1	5	2

(d)
	H	T	O
	[1]	[1]	
		6	9
+		5	7
	1	2	6

(e)
	H	T	O
	[1]	[1]	
		7	6
+		9	7
	1	7	3

(f)
	H	T	O
	[1]	[1]	
		3	3
+		8	9
	1	2	2

(g)
	H	T	O
	[1]	[1]	
		9	9
+		4	2
	1	4	1

(h)
	H	T	O
	[1]		
		8	6
+		6	2
	1	4	8

(i)
	H	T	O
	[1]	[ ]	
		7	4
+		4	5
	1	1	9

(j)
	H	T	O
	[1]	[1]	
		6	8
+		8	9
	1	5	7

(k)
	H	T	O
	[1]	[1]	
		9	9
+		9	3
	1	9	2

(l)
	H	T	O
	[1]	[1]	
		7	4
+		4	3
	1	1	7

(m)
	H	T	O
	[1]	[2]	
		5	8
		3	7
+		2	9
	1	2	4

(n)
	H	T	O
	[1]	[1]	
		6	4
		1	8
+		8	3
	1	6	5

(o)
	H	T	O
	[1]	[1]	
		5	4
		5	9
+		2	1
	1	3	4

(p)
	H	T	O
		[1]	
		2	8
		3	2
+		2	9
		8	9

(q)
	H	T	O
	[1]	[2]	
		4	8
		7	5
+		3	8
	1	6	1

(r)
	H	T	O
	[1]	[1]	
		5	5
		6	7
+		4	2
	1	6	4

(s)
	H	T	O
	[1]	[1]	
		6	7
		8	6
+		4	3
	1	9	6

(t)
	H	T	O
	[1]	[1]	
		2	8
		7	7
+		9	2
	1	9	7

Test Prep 3.4

Sol.1.(a)

	H	T	O
	[1]	[1]	
	6	7	5
+	1	4	8
	8	2	3

(b)

	H	T	O
	[1]	[1]	
	7	3	6
+	1	6	7
	9	0	3

(c)

	H	T	O
	[1]	[1]	
	3	7	2
+	4	6	9
	8	4	1

(d)

	H	T	O
	[1]	[1]	
	6	3	9
+	2	7	8
	9	1	7

(e)

	H	T	O
		[1]	
	8	2	6
+	1	6	9
	9	9	5

(f)

	H	T	O
	[1]	[1]	
	5	8	4
+	3	9	6
	9	8	0

(g)

	H	T	O
	[1]	[1]	
	6	8	5
+	1	8	9
	8	7	4

(h)

	H	T	O
	[1]	[1]	
	2	1	9
+	6	8	4
	9	0	3

Sol.2.(a)

	H	T	O
	[1]	[1]	
	3	9	5
+	4	5	9
	8	5	4

(b)

	H	T	O
	[1]	[1]	
	7	6	5
+	1	3	5
	9	0	0

(c)

	H	T	O
	[1]	[1]	
	4	5	7
+	3	6	9
	8	2	6

(d)

	H	T	O
	[1]	[1]	
	3	7	6
+	2	9	7
	6	7	3

(e)

	H	T	O
	[1]	[1]	
	3	9	7
+	4	9	4
	8	9	1

(f)

	H	T	O
		[1]	
	5	4	6
+	2	4	8
	7	9	4

(g)

	H	T	O
		[1]	
	4	8	9
+	2	0	3
	6	9	2

(h)

	H	T	O
	[1]	[1]	
	4	9	5
+	2	4	9
	7	4	4

Test Prep 3.5

Sol.1.(a)

	H	T	O
	[1]	[1]	
	5	4	5
	2	2	6
+	1	9	2
	9	6	3

(b)

	H	T	O
	[1]	[1]	
	4	3	6
	1	4	6
+	1	9	2
	7	7	4

(c)

	H	T	O
	[1]	[2]	
	6	2	9
	1	2	4
+		9	8
	8	5	1

(d)

	H	T	O
	[1]	[1]	
	3	2	6
	2	5	2
+	4	1	4
	9	9	2

(e)

	H	T	O
	[1]	[1]	
	5	5	5
		5	5
+			5
	6	1	5

(f)

	H	T	O
	[1]	[1]	
	3	2	5
	1	7	5
+	3	9	2
	8	9	2

(g)

	H	T	O
	[1]	[1]	
	2	0	0
	2	0	9
+	5	9	7
	1	0	0	6

(h)

	H	T	O
	[1]	[2]	
	3	0	8
	1	1	6
+	3	9	6
	8	2	0

Sol.2.(a)

	H	T	O
	[1]	[1]	
	3	4	7
	1	5	4
+	4	3	6
	9	3	7

(b)

	H	T	O
	[1]	[1]	
	5	3	7
	1	7	5
+	1	8	7
	8	9	9

(c)

	H	T	O
	[1]	[1]	
	4	1	7
	1	8	5
+	3	7	6
	9	7	8

(d)

	H	T	O
	[2]	[2]	
	5	7	8
	1	4	5
+	2	7	7
	1	0	0	0

(e)

	H	T	O
	[1]	[1]	
	8	6	3
		3	9
+		9	7
	9	9	9

(f)

	H	T	O
	[1]	[1]	
	5	7	1
	1	2	9
+		6	8
	7	6	8

(g)
	H	T	O
	1	1	
	8	3	4
		6	5
+			9
	9	0	8

(h)
	H	T	O
	1	2	
	5	7	6
	1	4	5
+		3	9
	7	6	0

Sol.1. 762 Students appeared in the examination.

	H	T	O
	1	1	
	5	8	4
+	1	7	8
	7	6	2

Sol.2. The number is 850.

	H	T	O
	1	1	
	5	5	6
+	2	9	4
	8	5	0

Sol.3. 506 votes were polled.

	H	T	O
	1	1	
	2	8	7
+	2	1	9
	5	0	6

Sol.4. There are 484.

	H	T	O
	1	2	
	2	4	9
	1	7	9
+		5	6
	4	8	4

Sol.5. There are 941 books.

	H	T	O
	2	2	
	1	9	4
	2	6	8
+	4	7	9
	9	4	1

Sol.6. 730 visitors came to the fair.

	H	T	O
	2	2	
	1	7	8
	3	8	5
+	1	6	7
	7	3	0

Creative Activity

Do yourself.

Math Olympiad

Sol. 1. (c) 5

Sol. 2. (a) addends

Sol. 3. (b) 728

Sol. 4. (b) 130

Sol. 5. (c) 933

Chapter-4
Subraction

Test Prep 4.1

Sol.1. (a)
	H	T	O
	6	5	5
–	4	3	2
	2	2	3

(b)
	H	T	O
	8	6	4
–	2	5	4
	6	1	0

(c)
	H	T	O
	7	9	7
–	2	4	5
	5	5	2

(d)
	H	T	O
	6	9	7
–	4	8	6
	2	1	1

Sol.2. (a)
	H	T	O
	9	5	4
–	3	4	3
	6	1	1

(b)
	H	T	O
	6	7	8
–	5	3	2
	1	4	6

(c)
	H	T	O
	9	8	7
–	6	4	2
	3	4	5

(d)
	H	T	O
	3	4	5
–	2	2	3
	1	2	2

(e)
	H	T	O
	7	2	6
–	4	0	2
	3	2	4

(f)
	H	T	O
	6	5	6
–	4	3	4
	2	2	2

(g)
	H	T	O
	7	8	5
–	6	6	0
	1	2	5

(h)
	H	T	O
	3	7	6
–	2	4	6
	1	3	0

(i)
	H	T	O
	8	2	4
–	3	0	2
	5	2	2

(j)
	H	T	O
	5	3	9
–	4	1	0
	1	2	9

(k)
	H	T	O
	4	7	5
–	1	3	1
	3	4	4

(l)
	H	T	O
	5	9	4
–	2	6	2
	3	3	2

Sol.3. (a)

H	T	O
6	0	6
– 4	0	8
1	9	8

(b)

H	T	O
7	6	0
– 3	2	0
4	4	0

(c)

H	T	O
4	8	6
– 1	7	3
3	1	3

(d)

H	T	O
6	8	7
– 3	3	2
3	5	5

(e)

H	T	O
3	5	6
–	2	5
3	3	1

(f)

H	T	O
4	8	3
–	7	2
4	1	1

(g)

H	T	O
4	7	8
–	7	6
4	0	2

(h)

H	T	O
6	4	9
– 3	2	9
3	2	0

Test Prep 4.2

Sol.1. (a)

T	O
6	13
7	3
– 2	6
4	7

(b)

T	O
5	14
6	4
– 4	5
1	9

(c)

T	O
7	16
8	6
– 3	9
4	7

(d)

T	O
8	10
9	0
– 8	4
0	6

(e)

T	O
2	15
3	5
– 1	6
1	9

(f)

T	O
5	12
6	2
– 1	7
4	5

(g)

T	O
4	12
5	2
– 2	9
2	3

(h)

T	O
6	13
7	3
– 2	7
4	6

Sol.2. (a)

T	O
4	13
5	3
– 1	8
3	5

(b)

T	O
3	12
4	2
– 1	7
2	5

(c)

T	O
5	15
6	5
– 4	8
1	7

(d)

T	O
6	12
7	2
– 5	9
1	3

(e)

T	O
7	14
8	4
– 4	6
3	8

(f)

T	O
8	10
9	0
– 6	8
2	2

(g)

T	O
4	17
5	7
– 2	9
2	8

(h)

T	O
7	14
8	4
– 6	5
1	9

(i)

T	O
5	12
6	2
– 4	4
1	8

(j)

T	O
6	17
7	7
– 6	9
0	8

(k)

T	O
6	10
7	0
– 5	6
1	4

(l)

T	O
3	16
4	6
– 2	7
1	9

(m)

T	O
7	10
8	0
– 6	3
1	7

(n)

T	O
4	14
5	4
– 2	5
2	9

(o)

T	O
3	13
4	3
– 3	9
0	4

(p)

T	O
5	12
6	2
– 3	3
2	9

(q)

T	O
6	12
7	2
– 3	4
3	8

(r)

T	O
5	11
6	1
– 2	9
3	2

(s)

T	O
7	10
8	0
– 7	8
0	2

(t)

T	O
8	11
9	1
– 1	9
7	2

(u)

T	O
3	10
4	0
– 2	7
1	3

(v)

T	O
4	12
5	2
– 3	7
1	5

(w)
T	O
8	13
9	3
– 3	9
5	4

(x)
T	O
6	12
7	2
– 5	7
1	5

Test Prep 4.3

Sol.1. (a)
H	T	O
5	13	10
6	4	0
– 3	7	6
2	6	4

(b)
H	T	O
5	11	15
6	2	5
– 4	9	6
1	2	9

(c)
H	T	O
8	9	10
9	0	0
– 5	3	3
3	6	7

(d)
H	T	O
7	10	12
8	1	2
– 6	5	4
1	5	8

(e)
H	T	O
4	10	14
5	1	4
– 3	7	7
1	3	7

(f)
H	T	O
5	11	10
6	2	0
– 4	8	8
1	3	2

(g)
H	T	O
□	□	□
7	2	9
– 4	2	8
3	0	1

(h)
H	T	O
7	11	10
8	2	0
– 6	5	4
1	6	6

(i)
H	T	O
6	11	12
7	2	2
– 6	5	6
0	6	6

(j)
H	T	O
7	12	14
8	3	4
– 5	4	9
2	8	5

(k)
H	T	O
□	4	10
9	5	0
– 7	3	2
2	1	8

(l)
H	T	O
5	11	17
6	2	7
– 4	3	9
1	8	8

Sol.2. (a)
H	T	O
8	9	12
9	0	2
– 7	6	7
1	3	5

(b)
H	T	O
6	9	14
7	0	4
– 5	9	8
1	0	6

(c)
H	T	O
7	9	11
8	0	1
– 4	4	2
3	5	9

(d)
H	T	O
5	9	17
6	0	7
– 4	9	9
1	0	8

(e)
H	T	O
3	9	13
4	0	3
– 2	8	5
1	1	8

(f)
H	T	O
8	9	10
9	0	0
– 3	5	2
5	4	8

(g)
H	T	O
5	9	10
6	0	0
– 5	6	4
3	6	

(f)
H	T	O
	7	4
–	4	8
	2	5

Subtraction

Sol.1. 68 apples were rotton.

H	T	O
2	1	14
3	2	4
– 2	5	6
0	6	8

Sol.2. 69 boys are there.

H	T	O
1	5	5
–	8	6
	6	9

Sol.3. 32 balloons were left.

H	T	O
1	2	8
–	9	6
	3	2

Sol.4. 192 students failed.

H	T	O
7	9	0
– 5	9	8
1	9	2

Sol.5. 639 passengers are left.

H	T	O
9	5	8
– 3	1	9
6	3	9

Sol.6. 418 hens are left in the farm.

H	T	O
6	1	5
– 1	9	7
4	1	8

Chapter-5
Multiplication

Test Prep 5.1

Sol.1. (a) 

$\boxed{5} + \boxed{5} + \boxed{5} = \boxed{15}$

(b) 

$\boxed{4} + \boxed{4} + \boxed{4} = \boxed{12}$

(c) 

$\boxed{3} + \boxed{3} + \boxed{3} + \boxed{3} = \boxed{12}$

Sol.2. (a) 

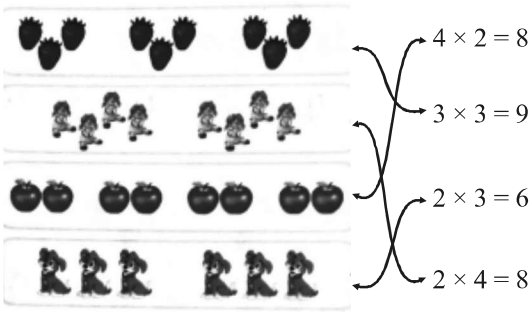
$\boxed{5} \times \boxed{4} = \boxed{20}$

(b) 

$\boxed{5} \times \boxed{6} = \boxed{30}$

(c) 

$\boxed{3} \times \boxed{7} = \boxed{21}$

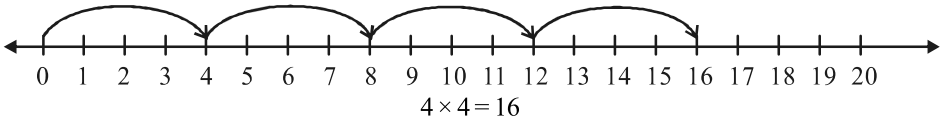
Sol.3. (a) 

(b)

(c)

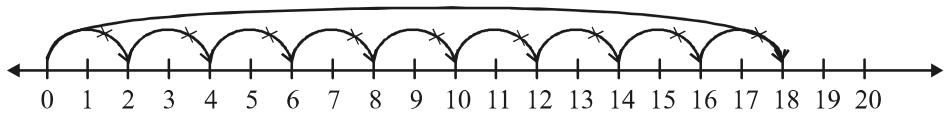
(d)

Test Prep 5.2

Sol.1. 1. 

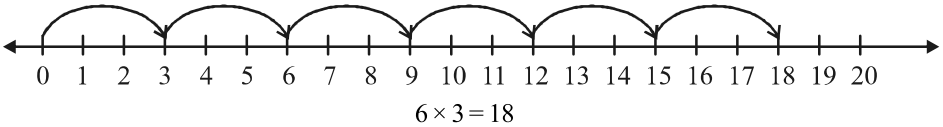
$4 \times 4 = 16$

2.



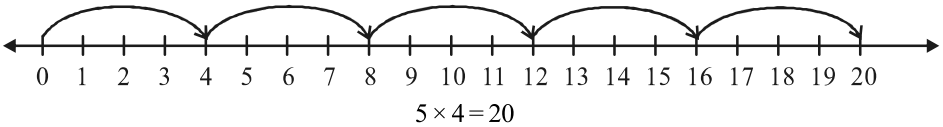
$2 \times 9 = 18$

3.



$6 \times 3 = 18$

4.



$5 \times 4 = 20$

Test Prep 5.3

Sol. 1. (a)

T	O
3	3
×	3
9	9

(b)

T	O
2	2
×	3
6	6

(c)

T	O
2	2
×	2
4	4

(d)

T	O
2	1
×	4
8	4

(e)

T	O
3	1
×	3
9	3

Sol. 2. (a)

T	O
1	1
×	8
8	8

(b)

T	O
3	3
×	2
6	6

(c)

T	O
1	2
×	4
4	8

(d)

T	O
3	4
×	2
6	8

(e)

T	O
4	2
×	2
8	4

Test Prep 5.4

Sol. 1. (a)

H	T	O
2	2	1
	×	2
4	4	2

(b)

H	T	O
2	0	4
	×	2
4	0	8

(c)

H	T	O
3	1	3
	×	3
9	3	9

(d)

H	T	O
2	1	0
	×	4
8	4	0

(e)

H	T	O
4	0	5
	×	1
4	0	5

(f)

H	T	O
4	2	0
	×	2
8	4	0

(g)

H	T	O
1	1	1
	×	5
5	5	5

(h)

H	T	O
1	0	1
	×	8
8	0	8

Sol. 2. (a)

H	T	O
1	3	2
	×	3
3	9	6

(b)

H	T	O
1	1	2
	×	4
4	4	8

(c)

H	T	O
2	1	0
	×	4
8	4	0

(d)

H	T	O
1	0	0
	×	9
9	0	0

(e)

H	T	O
4	2	2
	×	2
8	4	4

(f)

H	T	O
3	2	3
	×	3
9	6	9

(g)

H	T	O
4	2	3
	×	2
8	4	6

(h)

H	T	O
6	7	8
	×	1
6	7	8

Test Prep 5.5

Sol. 1. (a)

T	O
3	
1	6
×	6
9	6

(b)

T	O
1	
2	3
×	4
9	2

(c)

T	O
1	
1	6
×	3
4	8

(d)

T	O
1	
2	4
×	3
7	2

(e)

T	O
1	
1	3
×	4
5	2

(f)

T	O
3	
1	6
×	5
8	0

(g)

T	O
2	
1	9
×	3
5	7

(h)

T	O
1	
1	4
×	4
5	6

Sol. 2. (a)

H	T	O
	1	
	7	5
	×	3
2	2	5

(b)

H	T	O
	1	
	8	4
	×	3
2	5	2

(c)

H	T	O
	1	
	9	2
	×	7
6	4	4

(d)

H	T	O
	5	
	8	7
	×	8
6	9	6

(e)

H	T	O
	7	
	7	8
	×	9
7	0	2

(f)

H	T	O
	5	
	5	9
	×	6
3	5	4

(g)

H	T	O
	6	
	3	7
	×	9
3	3	3

(h)

H	T	O
	5	
	4	6
	×	9
4	1	4

Multiplication

Sol. 1. There are 112 students.

H	T	O
	3	
	2	8
	×	4
1	1	2

Sol. 2. There are 441 books.

H	T	O
	8	
	4	9
	×	9
4	4	1

Sol. 3. 108 players participated in the contest.

H	T	O
	1	
	1	2
	×	9
1	0	8

Sol. 4. There are 160 balls.

H	T	O
	1	
	3	2
	×	5
1	6	0

Sol. 5. There are 582 cartons.

H	T	O
	4	
	9	7
	×	6
5	8	2

Sol. 6. There are 148 wheels in all.

H	T	O
	2	
	3	7
	×	4
1	4	8

Maths Skills

Sol.1. (a)  $= 2 \times 5 = 10$

(b)  $= 4 \times 3 = 12$

Sol. 2. (a) $5 \times 0 =$ 0 (b) $9 \times 0 =$ 0

(c) $3 \times 0 =$ 0 (d) $8 \times 1 =$ 8

(e) $1 \times 7 =$ 7 (f) $1 \times 10 =$ 10

Sol. 3. (a) $5 \times 6 =$ 30 (b) $8 \times 7 =$ 56

(c) $9 \times 8 =$ 72 (d) $10 \times 7 =$ 70

(e) $6 \times 8 =$ 48 (f) $9 \times 9 =$ 81

Sol. 4. (a) $9 \times$ 6 $= 54$ (b) 8 $\times 6 = 48$

(c) $8 \times 3 =$ 24 (d) 8 $\times 10 = 80$

(e) $10 \times 9 =$ 90 (f) $6 \times$ 10 $= 60$

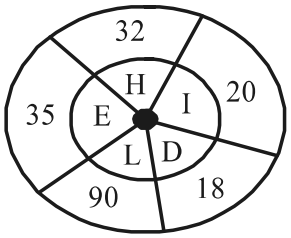
Sol. 5. (a)
$$\begin{array}{r} 33 \\ \times\ 2 \\ \hline 66 \end{array}$$
(b)
$$\begin{array}{r} 34 \\ \times\ 2 \\ \hline 68 \end{array}$$
(c)
$$\begin{array}{r} 22 \\ \times\ 3 \\ \hline 66 \end{array}$$
(d)
$$\begin{array}{r} 44 \\ \times\ 2 \\ \hline 88 \end{array}$$

(e)
$$\begin{array}{r} 68 \\ \times\ 4 \\ \hline 272 \end{array}$$
(f)
$$\begin{array}{r} 92 \\ \times\ 7 \\ \hline 644 \end{array}$$
(g)
$$\begin{array}{r} 58 \\ \times\ 8 \\ \hline 464 \end{array}$$
(h)
$$\begin{array}{r} 78 \\ \times\ 9 \\ \hline 702 \end{array}$$

Sol. 6. $18 \times 6 =$ 108 Answer : 108 balls in all.

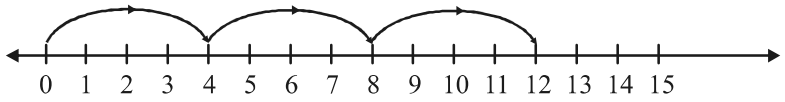
Sol. 7. $35 \times 9 =$ 315 Answer : 315 chairs in all.

Sol. 8. | 3×6 | 7×5 | 9×10 | 8×4 | 5×4 |
|---|---|---|---|---|
| 18 | 35 | 90 | 32 | 20 |
| D | E | L | H | I |



Maths Olympiad

Sol.1.



(c) $3 \times 4 = 12$

Sol. 2. (a) 0

Sol. 3. (c) the number itself.

Sol. 4. (b) 5×4

Sol. 5. (c) Eighty-four

Sol. 6. (b) 426

Sol. 7. (a) 324

Sol. 8. (b) 270

Chapter-6
Division

Test Prep 6.1

Sol. 1. Each group contains 4 balloons. Division fact is $12 \div 3 =$ 4

Sol. 2. Each group contains 3 balloons. Division fact is $12 \div 4 =$ 3

Sol. 3. Each group contains 4 balloons. Division fact is $16 \div 4 =$ 4

Sol. 4. (a) 10 mangoes to be put in group of 5 each.

$10 - 5 = 5; 5 - 5 = 0$

$10 \div 5 = 2$

So, there would be 2 groups.

(b) 6 balls to be put in pairs of 2 each.

$6 - 2 = 4; 4 - 2 = 2; 2 - 2 = 0$

$6 \div 2 = 3$

(c) 10 shells to be put in groups of 2 each.
$10 - 2 = 8$; $8 - 2 = 6$; $6 - 2 = 4$; $4 - 2 = 2$; $2 - 2 = 0$
$10 \div 2 = 5$

(d) 12 books to be put in groups of 3 each.
$12 - 3 = 9$; $9 - 3 = 6$; $6 - 3 = 3$; $3 - 3 = 0$
$12 \div 3 = 4$

(e) 30 erasers to be put in groups of 10 each.
$30 - 10 = 20$; $20 - 10 = 10$; $10 - 10 = 0$
$30 \div 10 = 3$

Test Prep 6.2

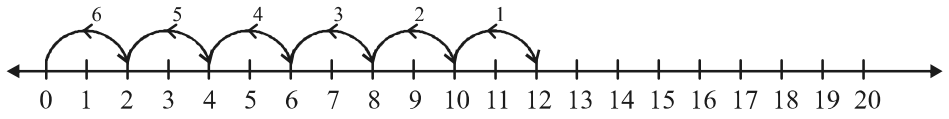
Sol. 1. (a) $30 \div 6 = 30 - 6 = 24$; $24 - 6 = 18$; $18 - 6 = 12$; $12 - 6 = 6$; $6 - 6 = 0$ = 5

(b) $24 \div 8 = 24 - 8 = 16$; $16 - 8 = 8$; $8 - 8 = 0$ = 3

(c) $35 \div 7 = 35 - 7 = 28$; $28 - 7 = 21$; $21 - 7 = 14$; $14 - 7 = 7$; $7 - 7 = 0$ = 5

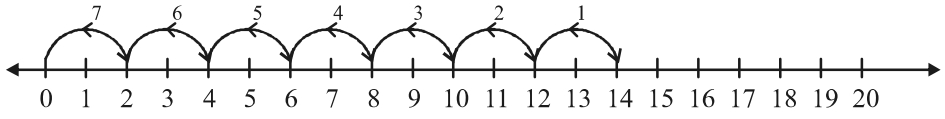
(d) $63 \div 9 = 63 - 9 = 54$; $54 - 9 = 45$; $45 - 9 = 36$; $36 - 9 = 27$; $27 - 9 = 18$; $18 - 9 = 9$; $9 - 9 = 0$
= 7

Sol.2. (a)



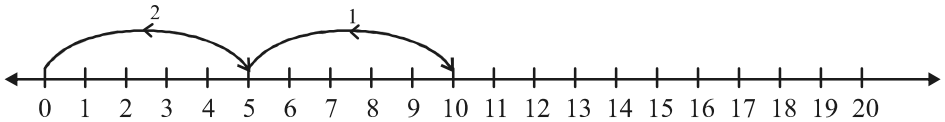
$12 \div 2 = 6$

(b)



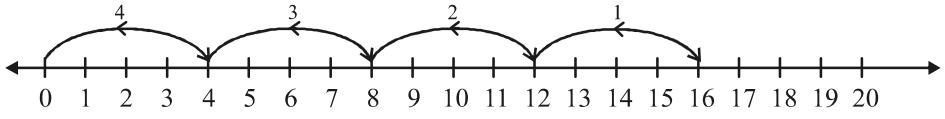
$14 \div 2 = 7$

(c)



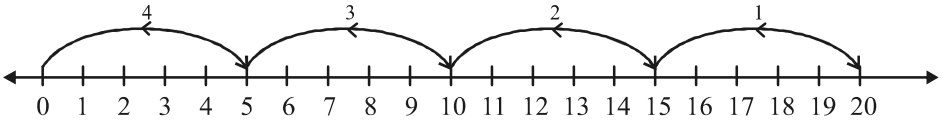
$10 \div 5 = 2$

(d)



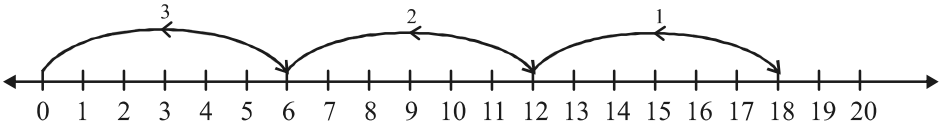
$16 \div 4 = 4$

(e)



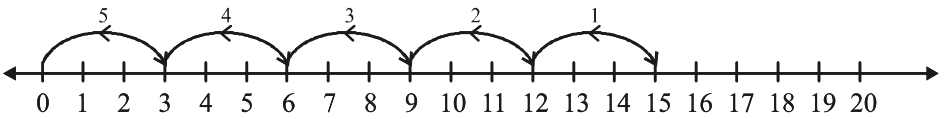
$20 \div 5 = 4$

(f)



$18 \div 6 = 3$

(g)



$15 \div 3 = 5$

Test Prep 6.3

Sol. 1. (a) $7 \times 2 = \boxed{14} \longrightarrow 14 \div 2 = \boxed{7}$ and $14 \div 7 = \boxed{2}$

(b) $12 \times 2 = \boxed{24} \longrightarrow 24 \div 2 = 12$ and $24 \div 12 = 2$

(c) $5 \times 8 = \boxed{40} \longrightarrow 40 \div 8 = 5$ and $40 \div 5 = 8$

(d) $7 \times 9 = \boxed{63} \longrightarrow 63 \div 9 = 7$ and $63 \div 7 = 9$

Sol. 2. (a) $12 \div 12 = \boxed{1}$ (b) $15 \div 1 = \boxed{15}$

(c) $28 \div 1 = \boxed{28}$ (d) $0 \div 8 = \boxed{0}$

(e) $20 \div 20 = \boxed{1}$ (f) $0 \div 6 = \boxed{0}$

(g) $90 \div 90 = \boxed{1}$ (h) $37 \div 1 = \boxed{37}$

(i) $25 \div 25 = \boxed{1}$

Test Perp 6.4

Sol. 1. (a) $16 \div 2 = 8$ (b) $24 \div 3 = 8$

(c) $36 \div 4 = 9$ (d) $45 \div 5 = 9$

(e) $63 \div 7 = 9$ (f) $64 \div 8 = 8$

(g) $27 \div 9 = 3$ (h) $56 \div 8 = 7$

(i) $49 \div 7 = 7$ (j) $42 \div 6 = 7$

(k) $81 \div 9 = 9$ (l) $63 \div 9 = 7$

(m) $80 \div 10 = 8$ (n) $48 \div 6 = 8$

(o) $35 \div 5 = 7$ (p) $70 \div 7 = 10$

(q) $90 \div 10 = 9$ (r) $54 \div 6 = 9$

Sol.2. (a) $6\overline{)45}$: $45 - 42 = 3$; $Q = 7, R = 3$

(b) $5\overline{)27}$: $27 - 25 = 2$; $Q = 5, R = 2$

(c) $9\overline{)80}$: $80 - 72 = 8$; $Q = 8, R = 8$

(d) $8\overline{)74}$: $74 - 72 = 2$; $Q = 9, R = 2$

(e) $3\overline{)28}$: $28 - 27 = 1$; $Q = 9, R = 1$

(f) $8\overline{)45}$: $45 - 40 = 5$; $Q = 5, R = 5$

(g) $8\overline{)77}$: $77 - 72 = 5$; $Q = 9, R = 5$

(h) $7\overline{)57}$: $57 - 56 = 1$; $Q = 8, R = 1$

(i) $7\overline{)65}$: $65 - 63 = 2$; $Q = 9, R = 2$

(j) $6\overline{)49}$: $49 - 48 = 1$; $Q = 8, R = 1$

(k) $9\overline{)79}$: $79 - 72 = 7$; $Q = 8, R = 7$

(l) $8\overline{)61}$: $61 - 56 = 5$; $Q = 8, R = 5$

(m) $3\overline{)28}$: $28 - 27 = 1$; $Q = 9, R = 1$

(n) $9\overline{)73}$: $73 - 72 = 1$; $Q = 8, R = 1$

(o) $9\overline{)87}$: $87 - 81 = 6$; $Q = 9, R = 6$

(p) $10\overline{)91}$: $91 - 90 = 1$; $Q = 9, R = 1$

Test Prep 6.5

Sol.1. (a) $2\overline{)268}$: $26 - 2 = 6$, $68 - 68 = 0$; $Q = 134, R = 0$

(b) $4\overline{)848}$: $84 - 8 = 4$, $48 - 48 = 0$; $Q = 212, R = 0$

(c) $3\overline{)963}$: $96 - 9 = 6$, $63 - 63 = 0$; $Q = 721, R = 0$

(d) $2\overline{)864}$: $8 - 8 = 0$, $6 - 6 = 0$, $4 - 4 = 0$; $Q = 432, R = 0$

Sol.2. (a) $6\overline{)271}$: $27 - 24 = 3$, $31 - 30 = 1$; $Q = 45, R = 1$

(b) $8\overline{)492}$: $49 - 48 = 1$, $12 - 8 = 4$; $Q = 61, R = 4$

(c) $$\begin{array}{r} 69 \\ 4\overline{)278} \\ -24 \\ \hline 38 \\ -36 \\ \hline 2 \\ \hline \end{array}$$

Q = 69, R = 2

(d) $$\begin{array}{r} 97 \\ 7\overline{)679} \\ -63 \\ \hline 49 \\ -49 \\ \hline 0 \\ \hline \end{array}$$

Q = 97, R = 0

Division

Sol. 1. The Shopkeeper put 5 sweets in each plate.

$$\begin{array}{r} 5 \\ 8\overline{)40} \\ -40 \\ \hline 0 \\ \hline \end{array}$$

Sol. 2. Each child will get 9 pencils.

$$\begin{array}{r} 9 \\ 9\overline{)81} \\ -81 \\ \hline 0 \\ \hline \end{array}$$

Sol. 3. 9 Cars will be needed.

$$\begin{array}{r} 9 \\ 4\overline{)36} \\ -36 \\ \hline 0 \\ \hline \end{array}$$

Sol. 4. There are 8 bananas in each bunch.

$$\begin{array}{r} 8 \\ 5\overline{)40} \\ -40 \\ \hline 0 \\ \hline \end{array}$$

Sol. 5. There are 30 weeks.

$$\begin{array}{r} 3 \\ 7\overline{)210} \\ -21 \\ \hline 0 \\ 0 \\ \hline 0 \\ \hline \end{array}$$

Sol. 6. 54 vans are required.

$$\begin{array}{r} 54 \\ 9\overline{)486} \\ -45 \\ \hline 36 \\ -36 \\ \hline 0 \\ \hline \end{array}$$

Maths Skills

Sol. 1. (a) $15 \div 3 = 5$ (b) $18 \div 2 = 9$

Sol. 2. (a) $4 \times 5 = 20; 20 \div 4 = \boxed{5}$ and $20 \div 5 = \boxed{4}$

(b) $7 \times 6 = 42; 42 \div 7 = \boxed{6}$ and $42 \div 6 = \boxed{7}$

Sol. 3. (a) $63 \div 7 = 9$ (b) $32 \div 8 = 4$

(c) $49 \div 7 = 7$ (d) $56 \div 8 = 7$

(e) $81 \div 9 = 9$ (f) $42 \div 6 = 7$

Sol.4. (a) $$\begin{array}{r} 12 \\ 7\overline{)86} \\ -7 \\ \hline 16 \\ -14 \\ \hline 2 \\ \hline \end{array}$$

Q = 12, R = 2

(b) $$\begin{array}{r} 13 \\ 5\overline{)66} \\ -5 \\ \hline 16 \\ -15 \\ \hline 1 \\ \hline \end{array}$$

Q = 13, R = 1

(c) $$\begin{array}{r} 111 \\ 6\overline{)667} \\ -6 \\ \hline 6 \\ -6 \\ \hline 7 \\ -6 \\ \hline 1 \\ \hline \end{array}$$

Q = 111, R = 1

(d) $$\begin{array}{r} 61 \\ 4\overline{)246} \\ -24 \\ \hline 6 \\ -4 \\ \hline 2 \\ \hline \end{array}$$

Q = 61, R = 2

Sol. 5. There are 18 rows.

$$\begin{array}{r} 18 \\ 8\overline{)144} \\ -8 \\ \hline 64 \\ -64 \\ \hline 0 \\ \hline \end{array}$$

<u>Creative Activity</u>

Sol. 1. (a) 8, 6, 48, 60
$48 \div 6 = 8$

(b) 2, 3, 18, 54
$54 \div 18 = 3$

(c) 7, 9, 63, 72
$63 \div 9 = 7$

(d) 7, 6, 8, 42
$42 \div 6 = 7$

(e) 48, 4, 12, 80
$48 \div 4 = 12$

(f) 2, 18, 21, 42
$42 \div 2 = 21$

(g) 3, 6, 30, 5
$30 \div 5 = 6$

(h) 3, 12, 36, 28
$36 \div 3 = 12$

(i) 8, 4, 32, 53
$32 \div 8 = 4$

(j) 5, 6, 40, 30
$30 \div 5 = 6$

(k) 8, 10, 40, 4
$40 \div 4 = 10$

(l) 48, 6, 8, 42
$48 \div 6 = 8$

Maths Olympiad

Sol. 1. (a) quotient

Sol. 2. (c) dividend

Sol. 3. (c) equally

Sol. 4. (c) 17

Examination Preparation - I

Sol. 1. (a) 275 = Two hundred seventy-five

(b) 392 = Three hundred ninety two

(c) 563 = Five hundred sixty-three

(d) 911 = Nine hundred eleven

Sol. 2. (a) Two hundred seventy-eight 278

(b) Six hundred three 603

(c) Eight hundred eighty 880

(d) Five hundred eighteen 518

Sol. 3. (a) 806 (b) 538

(c) 692

Sol. 4. (a) $732 = 700 + 30 + 2$

(b) $640 = 600 + 40 + 0$

(c) $809 = 800 + 9$

(d) $975 = 900 + 70 + 5$

Sol. 5. (a) $400 + 5 = 405$

(b) $600 + 70 + 8 = 678$

(c) $900 + 80 + 3 = 983$

(d) $800 + 3 = 803$

Sol. 6. (a) 678 [70] (b) 590 [500]

(c) 750 [0]

Sol.7. (a) 372 (89) (b) (831) 970

(c) 599 (300)

Sol. 8. (a) 812 608 (932) 588

(b) 639 725 (840) 120

Sol. 9. (a) 480, 738, 641, 599 = 480, 599, 641, 738

(b) 372, 601, 980, 540 = 372, 540, 601, 980

Sol.10. (a) 630, 780, 840, 520 = 840, 780, 630, 520

(b) 425, 195, 675, 835 = 835, 675, 425, 195

Sol.11. (a) [538] 539 (b) [609] 610

(c) [699] 700 (d) [898] 899

Sol.12. (a) 400 [401] 402 (b) 534 [535] 536

(c) 905 [906] 907

Sol.13. (a) 572 [573] (b) 648 [649]

(c) 890 [891] (d) 998 [999]

Sol.14. (a) $83 + 29 =$ [112]

(b) $74 + 97 + 88 =$ [259]

(c) $312 + 89 + 500 =$ [901]

Sol.15. (a) $93 - 65 =$ [28] (b) $85 - 49 =$ [28]

(c) $783 - 589 =$ [194]

Sol.16. (a) $35 \times 7 =$ [245] (b) $48 \times 5 =$ [240]

(c) $232 \times 3 =$ [696]

Sol.17. (a) $63 \div 9 =$ [7] (b) $64 \div 4 =$ [16]

(c) $468 \div 6 =$ [78]

Sol.18. They caught 85 parrots.

$$\begin{array}{r} 47 \\ +\ 38 \\ \hline 85 \end{array}$$

Sol.19. 16 beads are left.

$$\begin{array}{r} 82 \\ -\ 46 \\ \hline 16 \end{array}$$

Sol.20. 200 boys are carried.

$$\begin{array}{r} 25 \\ \times\ 8 \\ \hline 200 \end{array}$$

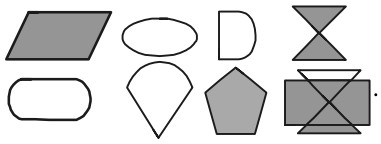
Sol.21. 64 mini vans are required.

$$\begin{array}{r} 64 \\ 9\overline{)576} \\ -\ 54 \\ \hline 36 \\ -\ 36 \\ \hline 0 \end{array}$$

Chapter-7
Geometry

Test Prep 7.1

Sol.1.



Sol. 2. (a) A Circle has 0 corner.

(b) A rectangle has 4 sides.

(c) All the sides of a Square are equal.

(d) A triangle has 3 sides.

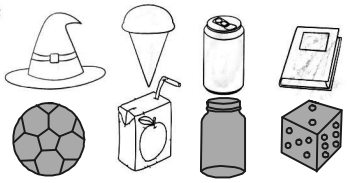
(e) Opposite sides of a rectangle are equal .

Sol. 3. (a) Horizontal lines 1 Slanting lines 2
Vertical lines 0 Curved lines 0
(b) Horizontal lines 2 Slanting lines 1
Vertical lines 2 Curved lines 0
(c) Horizontal lines 0 Slanting lines 0
Vertical lines 0 Curved lines 1
(d) Horizontal lines 0 Slanting lines 2
Vertical lines 0 Curved lines 1

Test Prep 7.2

Sol. 1. (a) match-box brick
(b) Cricket ball football
(c) tube-light pepsi-can
(d) ice-cube dice

Sol.2.



Sol. 3. (a) Straight edges = 12, Vertices = 8
(b) Curved edges = 0, Vertices = 0
(c) Straight edges = 12, Vertices = 8
(d) Straight edges = 8, Vertices = 8

Sol. 4. (a) A sphere has __0__ Corner.
(b) A dice is an example of __Cube__.
(c) A cylinder has __2__ flat faces.
(d) A cuboid has __12__ edges.

Test Prep 7.3

Sol. 1. Do yourself .

Sol. 2.

Rolling object	Sliding object
Pencil	eraser
Orange	brick
bangle	book
Candle, football	match box
Coin, pen	

Creative Activity

Do yourself.

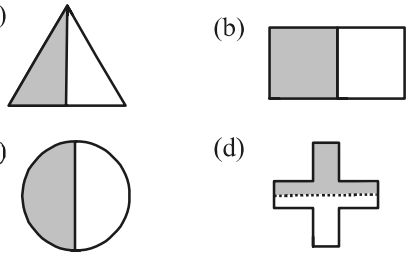
Maths Olympiad

Sol. 1. (b) Square
Sol. 2. (b) rectangle
Sol. 3. (b) circle
Sol. 4. (c) Sphere
Sol. 5. (b) 2 faces

Chapter-8
Fractions

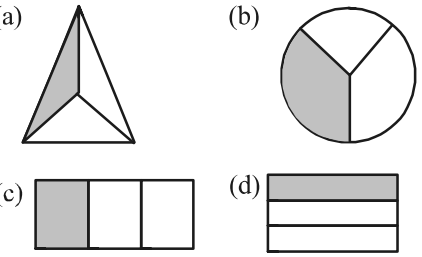
Test Prep 8.1

Sol.1. (a) (b)



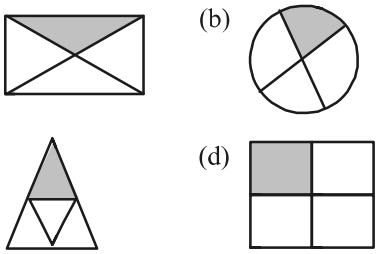
(c) (d)

Sol.2. (a) (b)



(c) (d)

Sol.3. (a) (b)



(c) (d)

Sol. 4. (a) $\frac{1}{4}$ (b) $\frac{1}{2}$
(c) $\frac{1}{3}$ (d) $\frac{2}{8}$
(e) $\frac{4}{8}$ (f) $\frac{3}{6}$

Chapter-9
Measurement

Test Prep 9.1

Sol. 1. (a) (i) fingers (b) (ii) hand span
(c) (iii) pace

Sol. 2. (a) Book is heavier than the calculator.
(b) Calculator is lighter than the book.
(c) Mangoes are heavier than the football.
(d) Football is lighter than the mangoes.

Sol.3. (a)

(b)

(c)

Test Prep 9.2

Sol. 1. (a) 4 (b) 8
(c) 4 (d) 5

Sol. 2. (a) 200 cm = 2 m (b) 500 cm = 5 m
(c) 600 cm = 6 m (d) 900 cm = 9 m
(e) 300 cm = 3 m (f) 1200 cm = 12 m

Sol. 3. (a) 4 m = 400 cm (b) 6 m = 600 cm
(c) 8 m = 800 cm (d) 10 m = 1000 cm
(e) 11 m = 1100 cm (f) 15 m = 1500 cm

Sol. 4. Do yourself.

Test Prep 9.3

Sol. 1. (a)
$$\begin{array}{r} 84\ \text{m} \\ +\ 66\ \text{m} \\ \hline 150\ \text{m} \end{array}$$
(b)
$$\begin{array}{r} 346\ \text{m} \\ +\ 354\ \text{m} \\ \hline 700\ \text{m} \end{array}$$
(c)
$$\begin{array}{r} 85\ \text{m} \\ -\ 26\ \text{m} \\ \hline 59\ \text{m} \end{array}$$
(d)
$$\begin{array}{r} 420\ \text{m} \\ -\ 189\ \text{m} \\ \hline 231\ \text{m} \end{array}$$
(e)
$$\begin{array}{rr} \text{m} & \text{cm} \\ 43 & 38 \\ +\ 29 & 59 \\ \hline 72 & 97 \end{array}$$
(f)
$$\begin{array}{rr} \text{m} & \text{cm} \\ 237 & 44 \\ +\ 68 & 48 \\ \hline 305 & 92 \end{array}$$
(g)
$$\begin{array}{rr} \text{m} & \text{cm} \\ 348 & 54 \\ 47 & 21 \\ +\ 467 & 18 \\ \hline 862 & 93 \end{array}$$
(h)
$$\begin{array}{rr} \text{m} & \text{cm} \\ 563 & 53 \\ 38 & 29 \\ +\ 6 & 8 \\ \hline 607 & 90 \end{array}$$
(i)
$$\begin{array}{rr} \text{m} & \text{cm} \\ 61 & 43 \\ -\ 19 & 27 \\ \hline 42 & 16 \end{array}$$
(j)
$$\begin{array}{rr} \text{m} & \text{cm} \\ 70 & 60 \\ -\ 46 & 54 \\ \hline 24 & 06 \end{array}$$
(k)
$$\begin{array}{rr} \text{m} & \text{cm} \\ 82 & 38 \\ -\ 37 & 29 \\ \hline 45 & 09 \end{array}$$
(l)
$$\begin{array}{rr} \text{m} & \text{cm} \\ 103 & 56 \\ -\ 58 & 28 \\ \hline 45 & 28 \end{array}$$

Sol. 2. She buys 91 cm ribbon.
$$\begin{array}{r} 28\ \text{cm} \\ 39\ \text{cm} \\ +\ 24\ \text{cm} \\ \hline 91\ \text{cm} \end{array}$$

Sol. 3. 21 m 24 cm was left.
(e)
$$\begin{array}{rr} \text{m} & \text{cm} \\ 49 & 60 \\ -\ 28 & 35 \\ \hline 21 & 25 \end{array}$$

Test Prep 9.4

Sol. 1. (a) 3 kg = 3000 g (b) 8 kg = 8000 g
(c) 6000 g = 6 kg (d) 9000 g = 9 kg

Sol. 2. (a) 500 g (c) 1 kg
(c) 2 kg (d) 5 kg

Sol. 3. (a) 80 g (b) 40 g
(c) 50 g (d) 20 g

Test Prep 9.5

Sol. 1. (a)
$$\begin{array}{r} 67\ \text{kg} \\ +\ 29\ \text{kg} \\ \hline 96\ \text{kg} \end{array}$$
(b)
$$\begin{array}{r} 146\ \text{kg} \\ +\ 789\ \text{kg} \\ \hline 935\ \text{kg} \end{array}$$
(c)
$$\begin{array}{r} 72\ \text{kg} \\ -\ 39\ \text{kg} \\ \hline 33\ \text{kg} \end{array}$$
(d)
$$\begin{array}{r} 302\ \text{kg} \\ -\ 65\ \text{kg} \\ \hline 237\ \text{kg} \end{array}$$
(e)
$$\begin{array}{rr} \text{kg} & \text{g} \\ 8 & 300 \\ -\ 4 & 125 \\ \hline 4 & 175 \end{array}$$
(f)
$$\begin{array}{rr} \text{kg} & \text{g} \\ 90 & 225 \\ -\ 79 & 287 \\ \hline 10 & 938 \end{array}$$
(g)
$$\begin{array}{rr} \text{kg} & \text{g} \\ 425 & 460 \\ -\ 68 & 276 \\ \hline 357 & 184 \end{array}$$
(h)
$$\begin{array}{rr} \text{kg} & \text{g} \\ 104 & 315 \\ -\ 65 & 176 \\ \hline 39 & 139 \end{array}$$
(i)
$$\begin{array}{rr} \text{kg} & \text{g} \\ 70 & 650 \\ -\ 8 & 080 \\ \hline 62 & 570 \end{array}$$
(j)
$$\begin{array}{rr} \text{kg} & \text{g} \\ 230 & 150 \\ -\ 45 & 075 \\ \hline 185 & 75 \end{array}$$

Sol. 2. 30 kg 262 g flour was left.
$$\begin{array}{rr} \text{kg} & \text{g} \\ 78 & 800 \\ -\ 48 & 538 \\ \hline 30 & 262 \end{array}$$

Sol. 3. 57 kg 745 g sugar was purchased.

kg	g
1 8	2 8 5
+ 3 9	4 6 0
5 7	7 4 5

Test Prep 9.6

Sol. 1. 2, 1, 3, 5, 4

Sol. 2. 4, 3, 1, 5, 2

Test Prep 9.7

Sol. 1. (a)

6 4 L	
+ 2 8 L	
9 2 L	

(b)

1 9 6 L	
+ 2 0 7 L	
4 0 3 L	

(c)

7 4 L	
– 3 6 L	
3 8 L	

(d)

6 4 5 mL	
– 3 7 8 mL	
2 6 7 mL	

(e)

L	ml
3 1 5	4 1 8
– 7 6	2 8 9
2 3 9	1 2 9

(f)

L	ml
2 3 4	3 7 0
– 1 6 5	1 8 5
6 9	1 8 5

(g)

L	ml
3 6 9	2 8 4
+ 1 7 4	5 3 8
5 4 3	8 2 2

(h)

L	ml
5 4 6	7 6 8
+ 4 6 7	1 7 6
1 0 1 3	9 4 4

(i)

L	ml
4 1 0	2 0 5
– 1 3 5	1 6 6
2 7 5	0 3 9

(j)

L	ml
2 8 7	3 1 4
– 1 9 8	2 7 5
8 9	0 3 9

Sol. 2. The capacity of the tank is 34 L 871 ml.

L	ml
2 6	3 8 5
+ 8	4 8 6
3 4	8 7 1

Sol. 3. 19 L 92 ml milk is left.

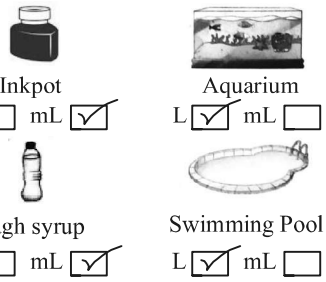
L	ml
2 8	3 6 0
– 9	2 6 8
1 9	0 9 2

Maths Skills

Sol. 1. Do yourself.

Sol. 2. (a) The weight of cauliflower is 1 kg.
(b) The weight of mangoes is 2 kg.
(c) The weight of watermelon is 5 kg.
(d) The weight of apples is 500 g.

Sol.3.



Creative Activity

Do yourself.

Maths Olympiad

Sol. 1. (a) 8 cm

Sol. 2. (a) more than 1 m

Sol. 3. (a) 200 g

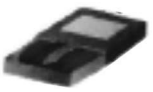
Sol. 4. (a) more than 5 kg

Sol. 5. (c) 500 mL

Chapter-10
Pattern

Test Prep 10.1

Sol.1. (a)  (b) 

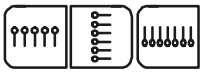
(c)  (d) 

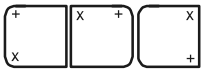
(e)  (f) 

Sol. 2. (a) 0, 2 (b) 5, 5 (c) 3, 3

Sol. 3. (a) 11, 13 (b) 24, 28
(c) 500, 600, 700 (d) 60, 50, 40

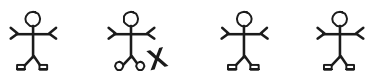
Sol.4. (a) 

(b) 

(c) 

(d) 

Sol.4. (a) 

(b) 

Chapter-11
Time

Test Prep 11.1

Sol. 1. (a) 2 o'clock or 2:00 (b) 5 o'clock or 5:00
(c) 8 o'clock or 8:00 (d) 1 o'clock or 1:00
(e) 12 o'clock or 12:00 (f) 11 o'clock or 11:00

Sol.2. (a) 
3 o'clock

(b) 
6 o'clock

(c) 
7 o'clock

(d) 
10 o'clock

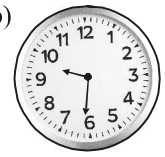
(e) 
6 o'clock

(f) 
9 o'clock

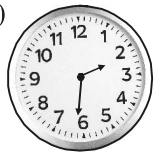
Test Prep 11.2

Sol. 1. (a) Half-past 5 (b) Half-past 7
(c) Half-past 4 (d) Half-past 1
(e) Half-past 9 (f) Half-past 12
(g) Half-past 3 (h) Half-past 10

Sol.2. (a) 
Half-past 4

(b) 
Half-past 9

(c) 
Half-past 12

(d) 
Half-past 2

(e) 
Half-past 10

(f) 
Half-past 5

(g) 
Half-past 6

(h) 
Half-past 8

Test Prep 11.3

Sol. 1. (a) A.M. (b) P.M. (c) A.M.
(d) P.M. (e) P.M. (f) P.M.

Sol. 2. (a) Sunday (b) Saturday
(b) Wednesday (d) Friday
(e) Friday
(f) Monday, Tuesday, Wednesday, Thursday, Friday, Saturday.
(g) Sunday

Sol. 3. (a) A leap year has 366 days.
(b) 1 week = 7 days.
(c) 2 weeks = 14 days.
(d) A years has 52 weeks.

Sol. 4. 3 days.

Sol. 5. 6 days.

Maths Skills

Sol. 1. Do yourself.

Sol. 2. (a) False (b) True (c) False
(d) False (e) True

Sol. 3. (a) There are 12 months in a year.
(b) 5th month of the year is May.
(c) August comes just after July.
(d) 4 months of a year have 30 days.
(e) I reach Mathura on Saturday. It was my Friend's birthday the next day. My friend's birthday was on Sunday.

Creative Activity

Sol. 1.

unasyd	sunday
nomyad	monday
esutady	tuesday
dwesenayd	wednesday
srthduay	thursday
irdfya	friday
yasarudt	saturday

Maths Olympiad

Sol. 1. (b) 6

Sol. 2. (b) 30 minutes

Sol. 3. (a) 1 hour

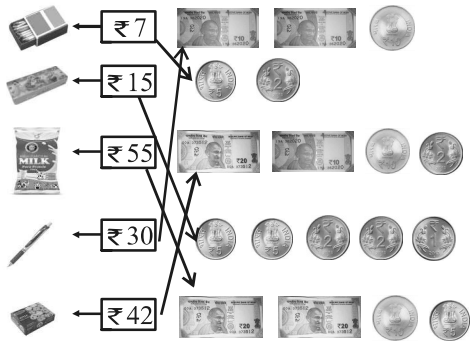
Sol. 4. (a) 28

Sol. 5. (b) March

Chapter-12
Money

Test Prep 12.1

Sol. 1.



Sol. 2. (a) ₹ 6 = 600 p (b) ₹ 9 = 900 p
(c) ₹ 10 = 1000 p (d) ₹ 8 = 800 p

Sol. 3. (a) ₹ 4 and 60 p = 460 p
(b) ₹ 8 and 75 p = 875 p
(c) ₹ 7 and 45 p = 745 p
(d) ₹ 9 and 85 p = 985 p

Sol. 4. (a) 200 p = ₹ 2 (b) 300 p = ₹ 3
(c) 400 p = ₹ 4 (d) 1000 p = ₹ 10
(e) 800 p = ₹ 8 (f) 900 p = ₹ 9

Sol. 5. (a) 245 p = ₹ 2 and 45 p
(b) 895 p = ₹ 8 and 95 p
(c) 605 p = ₹ 6 and 5 p
(d) 720 p = ₹ 7 and 20 p

Test Prep 12.2

Sol.1. (a)  (b) 
(c)  (d) 
(e)  (f) 
(g)  (h) 

Sol.2. (a) 
(b) 
(c) 
(d) 

Sol. 1. (a) 29 p + 35 p = 64 p
(b) 65 p + 34 p = 99 p
(c) 37 p + 28 p = 65 p
(d) ₹ 15 + ₹ 26 = ₹ 41
(e) ₹ 36 + ₹ 48 = ₹ 84
(f) ₹ 38 + ₹ 56 = ₹ 94
(g) ₹ 132 + ₹ 246 = ₹ 378
(h) ₹ 245 + ₹ 132 = ₹ 377

Sol. 2. (a) 87 p − 54 p = 33 p
(b) 78 p − 63 p = 15 p
(c) 95 p − 72 p = 23 p
(d) ₹ 57 − ₹ 27 = ₹ 30
(e) ₹ 89 − ₹ 56 = ₹ 33
(f) ₹ 49 − ₹ 38 = ₹ 11
(g) ₹ 532 − ₹ 421 = ₹ 111
(h) ₹ 678 − ₹ 564 = ₹ 114

Sums on money

Sol. 1. Prachi spent ₹698.

₹ 283
+ ₹ 415
= ₹ 698

Sol. 2. ₹ 35 is left with Monika.

₹ 6 0
− ₹ 2 5
₹ 3 5

Sol. 3. Vidya has ₹ 111.

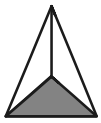
₹ 4 6
+ ₹ 6 5
₹ 1 1 1

Sol. 4. ₹ 244 were left with Kumkum's mother.

₹ 5 3 0
− ₹ 2 8 6
₹ 2 4 4

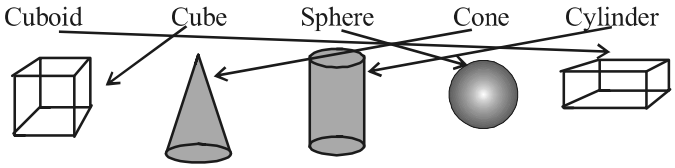
Sol. 5. Sapna has ₹ 147.

₹ 8 6
+ ₹ 6 1
₹ 1 4 7

Sol.2. (a)  $\frac{1}{2}$ (b)  $\frac{1}{4}$ (c)  $\frac{1}{3}$

Sol.3. (a) A (b) B (c) C

Sol.4.



Sol. 5. (a) 2 (b) 3 (c) 5 (d) 5

Sol. 6. Kanav give ₹ 597.

₹ 3 2 5
− ₹ 2 7 2
₹ 5 9 7

Sol. 7. Ravi needs ₹ 35.

₹ 5 5
− ₹ 2 0
₹ 3 5

Sol. 8. (a) Half-past 1 (b) Half-past 7
(c) Half-past 6 (d) Half-past 2

Sol.9. (a)  (b) 

6 o'clock Half-past 5

Chapter-13
Data Handling

Test Prep 13.1

Sol.1. (a) Chocolate (b) Peach
(c) 3 (d) 1
(d) Strawberry

Sol.2. (a) Five (b) Bus
(c) 2 (d) 15

Test Prep 13.2

Sol.1. (a) Banana (b) Mango
(c) 33
(d) Banana > Orange > Apple > Grapes > Mango

Examination Preparation - II
(Based on chapters 7-13)

Sol. 1. (a) $\frac{1}{4}$ (b) $\frac{1}{3}$ (c) $\frac{1}{2}$

(c)  (d) 

12 o'clock Half-past 7

Sol.10. (a) Monday (b) Friday
(c) 4 (d) 29

Sol.11. (a) 200 g (b) 1 kg
(c) 5 mL (d) 250 mL

Sol.12. (a) m (b) cm
(c) L (d) kg
(e) kg (f) mL

Chapter-1 Reminder of Pre-Class

Sol.1. (a) Number Name–Four hundred fifty-eight
(b) Number–396
(c) Number Name–Seven hundred sixty-three
(d) Number Name–Five hundred ninety-two
(e) Number–625
(f) Number–907

Sol.2. (a) <, (b) <, (c) >, (d) <

Sol.3. (a) 127, 281, 292, 297, 729
(b) 343, 438, 650, 834, 848

Sol.4. (a) 552, 525, 340, 255, 252
(b) 848, 834, 635, 438, 343

Sol.5. (a) 300+4, (b) 500+20+1
(c) 600+70+5 (d) 700+80+6

Sol.6. (a) 6, (b) 0, (c) 90, (d) 60, (e) 0, (f) 50

Sol.7. (a) 753, (b) 630, (c) 980, (d) 621, (e) 964, (f) 873

Sol.8. (a) 407, (b) 699, (c) 832, (d) 756

Sol.9. (a) 551, (b) 212, (c) 114, (d) 311

Sol.10. (a) 66, (b) 66, (c) 80, (d) 89

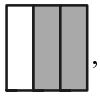
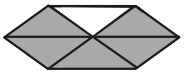
Sol.11. (a) 5, (b) 6, (c) 223

Sol.12. (a) 7

Sol.13. (a) April, June, September, November

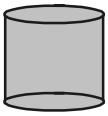
Sol.14. (a) January, March, May, July, August, October, December

Sol.15. (a) 1/3, (b) 3/4, (c) 2/4

Sol.16. (a)  , (b)  , (c) 

(d) 

Sol.17. (a) 
Solid
, (b) 
Cuboid,

(c) 
Cone
(d) 
Cylinder

Sol.18. (a) Half past two, (b) Half past eight
(c) 6 o'clock

Sol.19. (a)  , (b)  ,

(c) 

Sol.20. (a)

m	cm
440	22
+ 332	44
772	66

(b)

L	mL
141	273
+ 345	130
486	403

Sol.21. (a)
350 m
– 154 m
196 m

(b)
952 Kg
– 452 Kg
500 Kg

(c)
₹ 861
– ₹ 857
₹ 004 = ₹ 4

(d)
₹ 300
– ₹ 265
₹ 035 = ₹ 35

Sol.22.
984
– 345
639
639 fruits are good to eat.

Sol. 23.
125
× 7
875
Anjali uses 875 beads.

Sol.24.
$$8\overline{)168}\ \begin{array}{l}21\\ -16\\ \hline 8\\ -8\\ \hline 0\end{array}$$
21 boxes will be needed to pack 168 balls.

Chapter-2
Numbers up to Ten Thousand

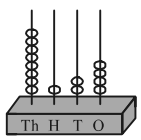
Test Prep 2.1

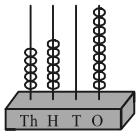
Sol.1. (a) Three thousand four hundred thirteen = 3413
(b) Four thousand seven hundred three = 4703
(c) Nine thousand two hundred five = 9205
(d) Eight thousand nine hundred twenty-five = 8925
(c) Seven thousand three hundred four = 7304

Sol.2. (a) Two thousand one hundred thirty-six
(b) Seven thousand one hundred eighty-five
(c) Four thousand six hundred thirty-two
(d) Five thousand one hundred ninety
(e) Nine thousand eight hundred thirty-three

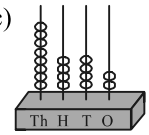
Sol.3. (a) 4523, (b)5042, (c) 7940, (d) 6042, (e) 6450, (f) 8006

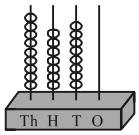
Sol.4. (a) (b)



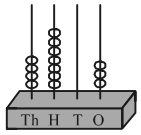


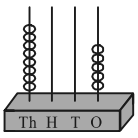
(c) (d)





(e) (f)





Test Prep 2.2

Sol.1. (a) 30, (b) 3, (c) 90, (d) 3000, (e) 2000, (f) 40, (g) 0, (h) 0

Sol.2. (a) 7 thousands + 2 hundreds + 0 tens + 6 ones
(b) 4 thousands + 0 hundreds + 4 tens + 9 ones
(c) 8 thousands + 9 hundreds + 6 tens + 0 ones
(d) 9 thousands + 8 hundreds + 5 tens + 3 ones

Sol.3. (a) 1000 + 500 + 70 + 6
(b) 3000 + 200 + 0 + 5
(c) 6000 + 0 + 20 + 7
(d) 7000 + 200 + 40 + 3

Sol.4. (a) 4056, (b) 2202, (c) 5247, (d) 6008

Sol.5. (b) 2583, (c) 3954, (d) 4690

Test Prep 2.3

Sol.1. (a) <, (b) >, (c) <, (d) = , (e) =, (f) >

Sol.2. (a) 5770, (b) 1003, (c) 2563, (d) 3577

Sol.3. (a) 6345, (b) 9691, (c) 6521, (d) 6401

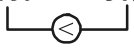
Sol.4. (a) 5261, 2651, 1625, 1516
(b) 3602, 3062, 402, 203
(c) 4256, 3052, 596, 463
(d) 8783, 7638, 7483, 6738

Sol.5. (a) 199, 1009, 1090, 1190
(b) 574, 1375, 1573, 3457
(c) 324, 432, 4032, 4320
(d) 6480, 6980, 7980, 7990

Sol.6. 7985 9025

7985 < 9025
or 9025 > 7985
So, Mr. Sharma gets more salary.

Sol.7. 2680 3095



2680 < 3095
or 3095 > 2680
So, Rohan saved more.

Test Prep 2.4

Sol.1. (a) 2962, (b) 5481, (c) 6070, (d) 2289, (e) 3282, (f) 4564, (g) 6786, (h) 9889

Sol.2. (a) 9531, 1359 (b) 7620, 20667
(c) 9854, 4589 (d) 7631, 1367

Sol.3. (a) 8853, 3358 (b) 7720, 2007
(c) 8840, 4008 (d) 9976, 6679

Test Prep 2.5

Sol.1. (a) even, (b) odd, (c) odd, (d) odd, (e) even, (f) odd, (g) odd, (h) even, (i) even

Sol.2. 1002, 1004, 1006, 1008, 1010, 1012, 1016, 1018, 1020

Sol.3. 2051, 2053, 2055, 2057, 2059, 2061, 2063, 2065, 2069

Sol.4. (a) 70, (b) 90, (c) 90, (d) 150, (e) 200, (f) 280
(g) 2760, (h) 4040, (i) 5310

Test Prep 2.6

Sol.1. (a) 2600, 2610, 2620, 2640
(b) 3810, 3830, 3840

Sol.2. (a) 2835, 3035, 3235
(b) 1434, 1534, 1634, 1734

Sol.3. (a) 4205, 5205, 7205, 8205
(b) 5321, 6321, 7321, 9321
(c) 2299, 3299, 4299, 5299
(d) 4673, 5673, 6673, 7673

Sol.4. (a) 3294, 3296, 3298, 3300, 3302, 3304
(b) 8587, 8589, 8591, 8593, 8593, 9595, 8595, 8597, 8599, 8601

Sol.5. (a) 9880, 9890, 9900, 9910, 9920, 9930, 9940
(b) 6887, 6897, 6907, 6917, 6927, 6937

Sol.6. (a) 3790, 3890, 3990, 4090, 4190, 4290, 4390, 4490
(b) 4999, 5099, 5199, 5299, 5399, 5499

Sol.7. (a) 3578, 4578, 5578, 6578, 7578, 8578
(b) 4609, 5609, 6609, 7609, 8609, 9609, 10609

Creativity Activity

Sol.1.

a → 4 ↓	7	6	b → 6					c ↓ 3
5			d → 5	4	3	2		5
2			9					2
e → 4	2	9	1		f → 9	0	2	6

Maths Skills

Sol.1. (a) 700, (b) 3, (c) 7000

Sol.2. (a) Two thousand thirty-six
(b) Five thousand three hundred sixteen
(c) Two thousand seven hundred ninety-two
(d) Eight thousand seven hundred thirty-nine

Sol.3. (a) 6209, (b) 7091, (c) 2004, (d) 8202

Sol.4. (a) $2472 = 2000 + 400 + 70 + 2$
(b) $3362 = 3000 + 300 + 60 + 2$
(c) $7052 = 7000 + 50 + 2$

Sol.5. (a) $1000 + 80 = 1080$
(b) $9000 + 800 + 6 = 9806$
(c) $7000 + 600 + 40 + 2 = 7642$

Sol.6. (a) $193 < 931$, (b) $2889 < 2898$
(c) $8018 = 8000 + 10 + 8$
(d) $300 <$ Three hundred ninety
(e) $8206 >$ Eigth thousand twenty-six
(f) $3756 > 400 + 10$

Sol.7. (a) 2197, 2864, 2913, 2984
(b) 4318, 5497, 6412, 7999

Sol.8. (a) 6890, 2766, 525, 301
(b) 6789, 5678, 5457, 3435

Sol.9. (a) 4691, (b) 9633, (c) 5504, (d) 8926

Sol.10. (a) 3895, (b) 4655, (c) 7000, (d) 7900

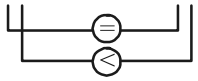
Sol.11. Greatest number = 9710,
Smallest number = 1079

Sol.12. 1000, yes, yes

Sol.13. (a) even, (b) odd, (c) even

HOTS

Sol.1. 3195 3980



$\therefore$ 3195 $\lessdot$ 3980

So, number of males are less.

Sol.2. 9063

Maths Olympiad

Sol.1. 6000+80+2 = 6082
(b) is correct.

Sol.2. 10, (c) is correct.

Sol.3. Sum = 7 + 9 + 11 = 27
(d) is correct.

Sol.4. (b) is correct.

Sol.5. (c) is correct.

Sol.6. (c) is correct.

Chapter-3
Roman Numerals

Test Prep 3.1

Sol.1. (a) Romans
(b) V, L and D
(c) I, X and C
(d) 3

Sol.2. (a) $8 = 5 + 3 = V + III = VIII$
(b) $12 = 10 + 2 = X + II = XII$
(c) $19 = 10 + 9 = 10 + (10 - 1) = X + (X - I)$
$= X + IX = XIX$
(d) $23 = 20 + 3 = XX + III = XXIII$
(e) $26 = 20 + 5 + 1 = XX + V + I = XXVI$
(f) $29 = 20 + 9 = 20 + (10 - 1) = XX + IX$
$= XXIX$
(g) $31 = 30 + 1 = XXX + I = XXXI$
(h) $34 = 30 + 4 = XXX + IV = XXXIV$
(i) $38 = 30 + 5 + 3 = XXX + V + III$
$= XXXVIII$
(j) $42 = 40 + 2 = (50 - 10) + 2 = XL + II$
$= XLII$
(k) $46 = 40 + 5 + 1 = (50 - 10) + V + I$
$= XL + V + I = XLVI$
(l) $47 = 40 + 7 = (50 - 10) + 5 + 2$
$= XL + V + II = XLVII$

Sol.3. (a) $IV = 5 - 1 = 4$
(b) $VI = 5 + 1 = 6$
(c) $IX = 10 - 1 = 9$
(d) $XIII = 10 + 1 + 1 + 1 = 13$
(e) $XXI = 10 + 10 + 1 = 21$
(f) $XVIII = 10 + 5 + 3 = 18$
(g) $XXXII = 10 + 10 + 10 + 2 = 32$
(h) $XXXVII = 10 + 10 + 10 + 5 + 2 = 37$
(i) $XL = L - X = 50 - 10 = 40$
(j) $XLIV = XL + IV = 40 + 4 = 44$
(k) $XLV = XL + V = 40 + 5 = 45$
(l) $XLIX = XL + IX = 40 + 9 = 49$

Sol.4. (a) XI = 11, XI = 11
XI = XI
(b) XII = 12, XXIII = 23
XII < XXIII
(c) XIV = 14, XIV = 14
XIV = XIV

(d) XXI = 21, XXX = 30
XXI < XXX
(e) XIX = 19, XVIII = 18
XIX > XVIII
(f) XXXV = 35, XXVIII = 28
XXXV > XXVIII

Sol.5. (a) Meaningfull, (b) Meaningfull
(c) Meaningless, because the symbol V cannot be repeated.
(d) Meaningless, because V cannot be subtracted.
(e) Meaningfull
(f) Meaningless, because any symbol cannot be repeated more than three times.
(g) Meaningless, because IX cannot be subtracted from VI.
(h) Meaningless, because IX cannot be subtractd from VI.

Sol.6. (a) XII + XI = 12 + 11 = 23 = XXIII
(b) VIII + IX = 8 + 9 = 17 = XVIII
(c) VII + XIV = 7 + 14 = 21 = XXI
(d) XI – V = 11 – 5 = 6 = VI
(e) XVII – IX = 17 – 9 = 8 = VIII
(f) XXX – XXVI = 30 – 26 = 4 = IV

Sol.7.

(a) III	17	(b) XXXIX	25
(c) XXII	20	(d) XLI	14
(e) XX	3	(f) XXV	48
(g) VII	22	(h) XIV	39
(i) XVII	7	(j) XLVIII	41

Maths Skills

Sol.1. (a) V + II = VII (b) X – I = IX
(c) II + IV = VI

Sol.2. (a) III **IV** V, (b) **X** XI, (c) IV **V**

Sol.3. (a) XX, XXI, XXII, XXIII, XXIV, XXV, XXVI, XXVII
(b) XVII, XVIII, XIX, XX, XXI, XXII
(c) XXXIV, XXXV, XXXVI, XXXVII, XXXVIII, XXXIV, XL

Sol.4. (a) XXV = 25, 19 + 6 = 25
XXV = 19 + 6
(b) 26 – 19 = 7, IX = 9
26 – 19 < IX
(c) 28 + 7 = 35, XXXIV = 35
28 + 7 > XXXIV
(d) XXXIII = 33, 50 – 16 = 34
XXXIII < 50 – 16

Maths Olympiad

Sol.1. (a) 29 = 20 + 9 = XX + IX = XXIX

Sol.2. (b)
Sol.3. (a)
Sol.4. (c)
Sol.5. (b) because IX cannot be subtracted from IV.
Sol.6. (d)
Sol.7. (d) XVI + VII = 16 + 7 = 23 = XXIII
Sol.8. (c) XXX – XV = 30 – 15 = 15 = XV

Chapter-4
Addition

Test Prep 4.1

Sol.1. (a) 8778, (b) 9988, (c) 9968, (d) 9599, (e) 5899, (f) 5399

Sol.2. (a) 6738, (b) 7789, (c) 9483, (d) 7600, (e) 5386, (f) 2857

Test Prep 4.2

Sol.1. (a) 9000, (b) 5905, (c) 9327, (d) 9942, (e) 7282, (f) 8426, (g) 7585, (h) 7927, (i) 8079, (j) 8192, (k) 8953, (l) 7683

Sol.2. (a) 7777, (b) 4416, (c) 11106, (d) 7217, (e) 11028, (f) 11238, (g) 9947, (h) 7880

Test Prep 4.3

Sol.1.
(a) 82 + 10 = 92 (b) 167 + 10 = 177
(c) 231 + 30 = 261 (d) 148 + 50 = 198
(e) 431 + 400 = 831 (f) 517 + 200 = 717
(g) 7312 + 100 = 7412 (h) 3473 + 300 = 3773
(i) 1358 + 1000 = 2358 (j) 2116 + 1000 = 3116
(k) 4217 + 3000 = 7217 (l) 6006 + 2000 = 8006

Sol.2. (a)

Actual sum	Estimated sum
58	58 ⟶ 60
+ 58	62 ⟶ + 60
120	120

(b)

Actual sum	Estimated sum
183	183 ⟶ 180
+ 287	287 ⟶ + 290
470	470

(c)

Actual sum	Estimated sum
302	302 ⟶ 300
+ 691	691 ⟶ + 690
993	990

(d)

Actual sum	Estimated sum
1669	1670
+ 1498	+ 1500
3167	3170

(e)

Actual sum	Estimated sum
4511	4510
+6721	+6720
11232	11230

(f)

Actual sum	Estimated sum
2899	2900
+3101	+3100
6000	6000

Test Prep 4.4

Sol.1. (a) 4086, (b) 3461, (c) 5580, (d) 3367

Sol.2. (a) 459, (b) 83, (c) 5601, (d) 4441, (e) 902, (f) 98, 2867

Test Prep 4.5

Sol.1. (a) No. of eggs sold in first week = 1048
No. of eggs sold in second week = +1638
Total eggs = 2686

Sol.2. (a) No. of women = 2654
No. of men = +3729
Total people = 6383

Sol.3. (a) No. of visitors on Monday = 2358
No. of visitors on Tuesday = +3946
Total people = 6304

Sol.4. (a) No. of bags of rice in one store = 4563
No. of bags of rice in another store = +4808
9371

Sol.5. (a) No. of men = 3562
No. of women = 2506
No. of Children = +1295
Total population = 7363

Sol.6. (a) No. of mangoes = 4563
No. of Bananas = 3645
No. of Pineapples = +1508
Total apples = 9716

Sol.7. (a) No. of roses = 1254
No. of marigold = +1575
Total flowers = 2829

Test Prep 4.6

Sol.1. **Note :** Students are advised to write the word problems in your own words.

Sol.2. (a)

Th	H	T	O
[2]	4	5	[3]
+ 6	[5]	6	8
9	0	2	1

(b)

Th	H	T	O
	1	3	[4][9]
+	[7]	[9]	6 8
	9	3	1 7

(c)

Th	H	T	O
[4]	2	[8]	7
+ 1	[4]	9	[6]
5	7	8	3

Creative Activity

Sol. (c) $72 + 37 = 70 + 2 + 30 + 7$
$= 70 + 30 + 2 + 7$
$= 100 + 9 = 109$

(d) $57 + 32 = 50 + 7 + 30 + 2$
$= 50 + 30 + 7 + 2$
$= 80 + 9 = 89$

Maths Skills

Sol.1. (a)

4059	
816	
+1977	
6852	

(b)

8888	
777	
66	
+ 155	
9886	

(c)

2401	
1036	
101	
+ 60	
3598	

(d)

5360	
407	
111	
+ 21	
5899	

Sol.2. (a)

Th	H	T	O
5	7	8	[7]
+ 2	3	[7]	9
[8]	1	6	6

(b)

Th	H	T	O
6	[2]	[8]	4
+ 1	7	9	[8]
[8]	0	8	2

(c)

Th	H	T	O
3	[2]	6	1
+[5]	5	[2]	8
8	7	8	[9]

Sol.3. (a) $2357 + 1876 = 1876 + 2357$

(b) $4689 + 1831 = 1831 + 4689$

(c) $5137 + 2391 = 2391 + 5137$

(d) $(2346 + 1530) + 1734 = 2346 + (1530 + 1734)$

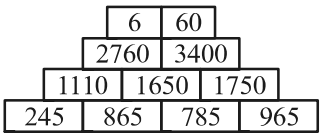
Sol.4. (a) $53 + 42 + 47 + 48 = (53 + 47) + (42 + 48)$
$= 100 + 100$
$= 200$

(b) $291 + 378 + 109 + 122$
$= (291 + 109) + (378 + 122)$
$= 400 + 500 = 900$

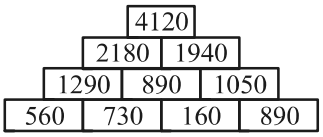
Sol.5. Wednesday = 4568
Thursday = + 2987
7555

HOTS

Sol. 1.



2.



Maths Olympiad

Sol.1. 5 hundreds + 9 tens + 3 ones
= 500 + 90 + 3 = 593 **(c)**

Sol.2. 923
+ 2789
3712
Anna has 3712 marbles **(d)**

Sol. 3. 1345 + 55 + 100 = 1400 + 100 = 1500
1500 = 1000 = 500 **(b)**

Sol. 4. 1 9 8 4
2 4 1 7
+ 1 6 8 9
6 0 9 0 (b)

Sol. 5. 1 8 9 4
2 3 1 7
+ 1 7 8 5
5 9 9 6 (b)

Sol. 6. No. of adults = 5436
No. of children = + 2878
Total population = 8314 (b)

Chapter-5
Subtraction

Test Prep 5.1

Sol.1. (a)
Th	H	T	O
6	5	4	8
– 4	3	3	6
2	2	1	2

(b)
Th	H	T	O
7	9	8	4
– 3	7	1	4
4	2	7	0

(c)
Th	H	T	O
9	4	8	2
– 6	3	4	0
3	1	4	2

Sol.2. (a)
Th	H	T	O
6	3	5	9
– 3	2	4	5
3	1	1	4

(b)
Th	H	T	O
7	6	0	4
– 5	6	0	2
2	0	0	2

(c)
Th	H	T	O
9	9	3	9
– 7	8	3	5
2	1	0	4

(d)
Th	H	T	O
7	2	4	9
– 3	2	1	7
4	0	3	2

(e)
Th	H	T	O
8	4	5	6
– 8	4	5	4
0	0	0	2

(f)
Th	H	T	O
7	6	6	4
– 3	4	3	2
4	2	3	2

Sol.3. (a)
Th	H	T	O
5	3	6	7
– 5	1	4	6
0	2	2	1

(b)
Th	H	T	O
9	4	4	7
– 7	2	1	3
2	2	3	4

(c)
Th	H	T	O
6	8	4	9
– 4	5	2	3
2	3	2	6

Sol.4. (a)
Th	H	T	O
5	0	9	4
– 3	0	5	2
2	0	4	2

(b)
Th	H	T	O
9	1	8	6
– 8	0	7	5
1	1	1	1

Sol.5. (a) 2345 – 0 = 2345
(b) 6785 – 6785 = 0
(c) 7336 – 1 = 7335
(d) 5433 – 10 = 5423
(e) 9267 – 1 = 9266
(f) 3267 – 100 = 3167
(g) 9543 – 100 = 9443
(h) 6770 – 1000 = 5770
(i) 6631 – 1000 = 5631

Test Prep 5.2

Sol.1. Subtract :

(a) Th H T O
4 6 3 2
– 3 7 6 5
0 8 6 7

(b) Th H T O
7 7 9 7
– 2 8 8 8
4 9 0 9

(c) Th H T O
5 6 4 3
– 2 8 5 6
2 7 8 7

(d) Th H T O
4 7 9 6
– 1 9 9 8
2 7 9 8

(e) Th H T O
9 0 2 0
– 8 9 6 4
0 0 5 6

(f) Th H T O
4 0 0 0
– 2 8 3 2
1 1 6 8

Sol.2. (a) Th H T O
7 7 7 7
– 4 9 9 7
2 7 8 0

(b) Th H T O
5 6 6 7
– 4 9 9 4
0 6 7 3

(c) Th H T O
7 4 6 7
– 5 1 8 6
2 2 8 4

(d) Th H T O
4 9 3 7
– 2 6 3 9
2 2 9 8

(e) Th H T O
1 0 0 0
– 9 9 9
0 0 0 1

(f) Th H T O
7 0 0 0
– 5 9 7 4
1 0 2 6

Sol.3. (a) Th H T O
8 9 0 9
– 6 4 5 4
2 4 5 5

(b) Th H T O
8 7 9 9
– 8 4 9 0
0 3 0 9

(c) Th H T O
6 7 6 7
– 4 9 7 6
1 7 9 1

(d) Th H T O
7 3 4 5
– 3 4 9 4
3 8 5 1

(e) Th H T O
6 0 0 0
– 5 4 6 2
0 5 3 8

(f) Th H T O
4 9 4 3
– 1 0 4 9
3 8 9 4

Test Prep 5.3

Sol.1. Subtract :

(a) Th H T O
6 [6] 5 7
– [1] 4 2 1
5 2 3 [6]

(b) Th H T O
3 2 5 7
– [1] 1 [4] [5]
2 [1] 1 2

(c) Th H T O
7 6 4 [9]
– 6 5 [2] 9
1 1 2 0

Sol.2. (a) Actual difference
873
– 556
317

Estimated sum
870
– 560
310

(b) Actual difference
936
– 378
558

Estimated sum
940
– 380
560

(c) Actual difference
598
– 564
034

Estimated sum
600
– 560
040

(d) Actual difference
1858
– 772
1084

Estimated sum
1860
– 770
1090

(e) Actual difference
5114
– 3257
1857

Estimated sum
5110
– 3260
1850

(f) Actual difference
9108
– 6536
2572

Estimated sum
9110
– 6540
2570

Test Prep 5.4

Sol.1. Total seats = 3100
No. of persons = – 2931
Vacant seats = 0169

Sol.2. Total bags of rice = 5908
No. of bags sold = – 3764
No. of bags left = 2144

Sol.3. Total Sheets = 9825
Sheets used = – 6452
Sheets left = 3373

Sol.4. Total packets = 8404
Packets distributed = – 7681
Packets left = 0723

Sol.5. Total hens = 6949
Hens died = – 2990
Hens left = 3959

Sol.6. Money in the account = 9515
Money withdraw = – 2990
Money left = 5651

Test Prep 5.5

Sol.1. (a) 3825 + 1888 = 5713 and 5713 – 987 = 4726

$\therefore$ 3825 + 1888 – 987 = 4726

(b) 8976 + 5100 = 3876 and 3876 + 1000 = 4876

$\therefore$ 8976 – 5100 + 1000 = 4876

(c) 4231 + 1965 = 2266 and 2266 + 985 = 3251

$\therefore$ 4231 – 1965 + 985 = 3251

(d) 3256 + 1634 = 4890 and 4890 + 4589 = 301

$\therefore$ 3256 + 1634 – 4589 = 301

(e) 8532 + 3756 = 12288 and 1986 + 5288 = 7274 and 12288 – 7274 = 5014

$\therefore$ 8532 – 1986 + 3756 – 5288
= 8532 + 3756 – 1986 – 5288
= 5014

(f) 2634 + 1687 = 4321 and 834 + 1622 = 2456 and 4321 – 2456 = 1865

$\therefore$ 2634 + 1687 – 834 – 1622 = 1865

(g) 6702 + 8329 = 15031 and 9561 + 3385 = 12946 and 15031 – 12046 = 2085

$\therefore$ 6702 – 9561 – 3385 + 8329 = 2085

(h) 7008 + 9987 = 16995 and 9522 + 832 = 10354 and 16995 – 10354 = 6641

$\therefore$ 7008 – 9522 + 9987 – 832 = 6641

Sol.2. Money left with Prachi = ₹ 8530 – (₹ 2295 + ₹ 3685)
= ₹ 8530 – ₹ 5980
= ₹ 2550

2295 + 3685 = 5980 and 8530 – 5980 = 2550

Sol.3. No. of Children = 8125 – (2896 – 2567)
= 8125 – 5463 = 2662

2896 + 2567 = 5463 and 8125 – 5463 = 2662

Sol.4. No. of persons visited the zoo on Sunday
= 8034 – (3548 + 1698)
= 8034 – 5246 = 2788

3548 + 1698 = 5246 and 8034 – 5246 = 2788

Sol.5. Money still short of = ₹ 8999 – (₹ 5437 + ₹ 2500)
= ₹ 8999 – ₹ 7937
= ₹ 1062

5437 + 2500 = 7937 and 8999 – 7937 = 1062

Maths Skills

Sol.1. (a) 6432 – 2785 = 3647 (b) 5937 – 2889 = 3048 (c) 7542 – 3875 = 3667

(d) 8953 – 5996 = 2957 (e) 7954 – 2679 = 5275 (f) 8675 – 5986 = 2689

Sol.2. (a) 8295 – 0 = 8295 (b) 6783 – 6783 = 0
(c) 4228 – 0 = 4288 (d) 4688 – 0 = 4688

(e) $3578 - 3578 = 0$ (f) $8561 - 1 = 8560$

Sol.3. (a) $2759 - 10 = 2749$

(b) $3890 - 100 = 3790$

(c) $5985 - 3000 = 2985$

(d) $5113 - 1738 = 2375$

(e) $8952 - 2789 = 6163$

(f) $8900 - 0 = 8900$

Sol.4. (a)
$$\begin{array}{r} 876 \\ -\ 495 \\ \hline 381 \end{array} \text{ and } \begin{array}{r} 671 \\ -\ 532 \\ \hline 139 \end{array}$$

Since, $381 > 139$

So, $876 - 495 > 671 - 532$

(b)
$$\begin{array}{r} 895 \\ -\ 380 \\ \hline 515 \end{array} \text{ and } \begin{array}{r} 675 \\ -\ 160 \\ \hline 515 \end{array}$$

Since, $515 = 515$

So, $895 - 380 = 675 - 160$

(c)
$$\begin{array}{r} 356 \\ -\ 248 \\ \hline 108 \end{array} \text{ and } \begin{array}{r} 526 \\ -\ 417 \\ \hline 109 \end{array}$$

Since, $108 < 109$

So, $356 - 248 < 526 - 417$

(d)
$$\begin{array}{r} 3854 \\ -\ 1699 \\ \hline 2155 \end{array} \text{ and } \begin{array}{r} 8932 \\ -\ 7966 \\ \hline 966 \end{array}$$

Since, $2155 > 966$

So, $3854 - 1699 > 8932 - 7966$

Sol.5. (a) $1678 - 5432 + 6700 - 598$

$= 1678 + 6700 - 5432 - 598 = 2348$

$$\begin{array}{r} 1678 \\ -\ 6700 \\ \hline 8378 \end{array} \text{ and } \begin{array}{r} 5432 \\ -\ 598 \\ \hline 6030 \end{array} \quad \begin{array}{r} 8378 \\ -\ 6030 \\ \hline 2348 \end{array}$$

(b) $6284 - 6237 + 1098 - 956$

$= 6284 + 1098 - 6237 - 956$

$= 7382 - 7193 = 189$

$$\begin{array}{r} 6284 \\ +\ 1098 \\ \hline 7382 \end{array} \text{ and } \begin{array}{r} 6237 \\ +\ 956 \\ \hline 7193 \end{array} \quad \begin{array}{r} 7382 \\ -\ 7193 \\ \hline 189 \end{array}$$

(c) $5032 - 9678 + 3059 + 2009$

$= 5032 + 3059 + 2009 - 9678$

$= 10100 - 9678 = 422$

$$\begin{array}{r} 5032 \\ 3059 \\ +\ 2009 \\ \hline 10100 \end{array} \quad \begin{array}{r} 10100 \\ -\ 9678 \\ \hline 422 \end{array}$$

(d) $9348 - 2146 + 1678 - 8332$

$= 9348 + 1678 - 2146 - 9332$

$= 11026 - 10478 = 548$

$$\begin{array}{r} 9348 \\ +\ 1678 \\ \hline 11026 \end{array} \text{ and } \begin{array}{r} 2146 \\ +\ 8332 \\ \hline 10478 \end{array} \quad \begin{array}{r} 11026 \\ -\ 10478 \\ \hline 548 \end{array}$$

Sol.6. Total postcards = 3750

Rohit has = $-\ 2692$

Ruby has = 1058 postcards

Sol.7. Total cost = ₹ 1778 + ₹ 1695

= ₹ 3473

Amount given to shopkeeper = ₹ 2×2000

= ₹ 4000

Amount received from the shopkeetper

= ₹ 4000 – ₹ 3473

= ₹ 527

Sol.8. (a) 8183 ⟶ 8180

3186 ⟶ $-\ 3190$

Estimated difference = 4990

(b) 7248 ⟶ 7250

4692 ⟶ $-\ 4700$

Estimated difference = 2550

(c) 6128 ⟶ 6130

4397 ⟶ $-\ 4400$

Estimated difference = 1730

HOTS

Sol.1. $1500 + 500 = 2000$

and $1500 - 500 = 1000$

so, the two numbers are 1500 and 500.

Sol.2. Let number be N.

$N + 1000 - 1500 = 200$

$N = 200 + 1500 - 1000 = 1700 - 1000 = 700$

Maths Olympiad

Sol.1.
$$\begin{array}{r} 8000 \\ -\ 3759 \\ \hline 4241 \end{array}$$ (b)

Sol.2.
$$\begin{array}{r} 4601 \\ -\ 296 \\ \hline 4897 \end{array} \qquad \begin{array}{r} 4897 \\ -3508 \\ \hline 1389 \end{array}\ \text{(d)}$$

Sol.3.
$$\begin{array}{r} 1000 \\ -\ 697 \\ \hline 303 \end{array}\ \text{(b)}$$

Sol.4.
$$\begin{array}{r} 6002 \\ -4752 \\ \hline 1244 \end{array}\ \text{(d)}$$

Sol.5.
$$\begin{array}{r} 3258 \\ +\ 4167 \\ \hline 7425 \end{array} \text{ and } \begin{array}{r} 4167 \\ +3258 \\ \hline 909 \end{array} \qquad \begin{array}{r} 7425 \\ -\ 909 \\ \hline 6516 \end{array}\ \text{(d)}$$

Sol.6. Total children = 3040

No. of children who play football and cricket
= 1680 + 298 = 1978

No. of children who play hockey
= 3040 – 1978 = 1062 (b)

Chapter-6
Multiplication

Test Prep 6.1

Sol.1. (a) 4, 3 (b) 2, 7 (c) 1, 9 (d) 6, 4
Sol.2. (a) 35, (b) 54, (c) 25, (d) 27, (e) 24, (f) 48
Sol.3. (a) 6, (b) 6, (c) 9, (d) 9, (e) 3, (f) 4
Sol.4. (a) 23, (b) 67, (c) 39, (d) 1, (e) 870, (f) 0
(g) 8, (h) 8, (i) 7, (j) 20

Test Prep 6.2

Sol.1. (a)
$$\begin{array}{r} \text{H T O} \\ 1\ 3\ 2 \\ \times\ 3 \\ \hline 3\ 9\ 6 \end{array}$$
(b)
$$\begin{array}{r} \text{H T O} \\ 4\ 1\ 3 \\ \times\ 2 \\ \hline 8\ 2\ 6 \end{array}$$
(c)
$$\begin{array}{r} \text{H T O} \\ 2\ 1\ 0 \\ \times\ 4 \\ \hline 8\ 4\ 0 \end{array}$$
(d)
$$\begin{array}{r} \text{H T O} \\ 1\ 3\ 5 \\ \times\ 7 \\ \hline 9\ 4\ 5 \end{array}$$
(e)
$$\begin{array}{r} \text{H T O} \\ 2\ 0\ 7 \\ \times\ 4 \\ \hline 8\ 2\ 8 \end{array}$$
(f)
$$\begin{array}{r} \text{H T O} \\ 1\ 8\ 4 \\ \times\ 5 \\ \hline 9\ 2\ 0 \end{array}$$

Sol.2. (a)
$$\begin{array}{r} \text{Th H T O} \\ 4\ 5\ 6 \\ \times\ 8 \\ \hline 36\ 4\ 8 \end{array}$$
(b)
$$\begin{array}{r} \text{Th H T O} \\ 8\ 6\ 7 \\ \times\ 6 \\ \hline 52\ 0\ 2 \end{array}$$
(c)
$$\begin{array}{r} \text{Th H T O} \\ 6\ 0\ 8 \\ \times\ 5 \\ \hline 30\ 4\ 0 \end{array}$$
(d)
$$\begin{array}{r} \text{Th H T O} \\ 5\ 9\ 8 \\ \times\ 9 \\ \hline 53\ 8\ 2 \end{array}$$
(e)
$$\begin{array}{r} \text{Th H T O} \\ 9\ 8\ 7 \\ \times\ 7 \\ \hline 69\ 0\ 9 \end{array}$$
(f)
$$\begin{array}{r} \text{Th H T O} \\ 7\ 7\ 9 \\ \times\ 4 \\ \hline 31\ 1\ 6 \end{array}$$

Test Prep 6.3

Sol.1. (a)
$$\begin{array}{r} \text{Th H T O} \\ 2\ 3\ 1\ 3 \\ \times\ 3 \\ \hline 6\ 9\ 3\ 9 \end{array}$$
(b)
$$\begin{array}{r} \text{Th H T O} \\ 1\ 0\ 3\ 2 \\ \times\ 2 \\ \hline 2\ 0\ 6\ 4 \end{array}$$
(c)
$$\begin{array}{r} \text{Th H T O} \\ 1\ 2\ 4\ 3 \\ \times\ 2 \\ \hline 2\ 4\ 8\ 6 \end{array}$$

Sol.2. (a)
$$\begin{array}{r} \text{Th H T O} \\ 1\ 9\ 7\ 8 \\ \times\ 3 \\ \hline 5\ 9\ 3\ 4 \end{array}$$
(b)
$$\begin{array}{r} \text{Th H T O} \\ 1\ 7\ 8\ 9 \\ \times\ 3 \\ \hline 5\ 3\ 6\ 7 \end{array}$$
(c)
$$\begin{array}{r} \text{Th H T O} \\ 1\ 3\ 4\ 7 \\ \times\ 6 \\ \hline 8\ 0\ 8\ 2 \end{array}$$
(d)
$$\begin{array}{r} \text{Th H T O} \\ 2\ 7\ 5\ 9 \\ \times\ 3 \\ \hline 8\ 2\ 7\ 7 \end{array}$$
(e)
$$\begin{array}{r} \text{Th H T O} \\ 3\ 0\ 5\ 6 \\ \times\ 3 \\ \hline 9\ 1\ 6\ 8 \end{array}$$
(f)
$$\begin{array}{r} \text{Th H T O} \\ 2\ 2\ 3\ 4 \\ \times\ 4 \\ \hline 8\ 9\ 3\ 6 \end{array}$$

Sol.3. (a)
$$\begin{array}{r} 1\ 2\ 1\ 4 \\ \times 2 \\ \hline 2\ 4\ 2\ 8 \end{array}$$
(b)
$$\begin{array}{r} 2\ 2\ 2\ 2 \\ \times 3 \\ \hline 6\ 6\ 6\ 6 \end{array}$$
(c)
$$\begin{array}{r} 1\ 0\ 8\ 7 \\ \times 6 \\ \hline 6\ 5\ 2\ 2 \end{array}$$
(d)
$$\begin{array}{r} 3\ 0\ 1\ 8 \\ \times 2 \\ \hline 6\ 0\ 3\ 6 \end{array}$$
(e)
$$\begin{array}{r} 2\ 7\ 8\ 2 \\ \times 3 \\ \hline 8\ 3\ 4\ 6 \end{array}$$
(f)
$$\begin{array}{r} 1\ 6\ 7\ 2 \\ \times 5 \\ \hline 8\ 3\ 6\ 0 \end{array}$$

Test Prep 6.4

Sol.1. (a) 9490, (b) 6210, (c) 8670, (d) 3260
(e) 7640, (f) 3800, (g) 2900, (h) 40000
(i) 7800, (j) 4300, (k) 5900, (l) 7300
(m) 8600, (n) 34200, (o) 42100, (p) 4000
(q) 7000, (r) 8000, (s) 9000, (t) 15000
(u) 53000

Sol.2. (a) $39 \times 20 = 39 \times 2 \times 10 = 78 \times 10 = 780$
(b) $46 \times 30 = 46 \times 3 \times 10 = 138 \times 10 = 1380$
(c) $75 \times 40 = 75 \times 4 \times 10 = 300 \times 10 = 3000$
(d) $76 \times 60 = 76 \times 6 \times 10 = 456 \times 10 = 4560$
(e) $78 \times 70 = 78 \times 7 \times 10 = 546 \times 10 = 5460$
(f) $40 \times 80 = 4 \times 8 \times 100 = 32 \times 100 = 3200$
(g) $42 \times 200 = 42 \times 2 \times 100 = 196 \times 100 = 19600$
(h) $36 \times 300 = 36 \times 3 \times 100 = 108 \times 100 = 10800$
(i) $49 \times 400 = 49 \times 4 \times 100 = 196 \times 100 = 19600$
(j) $72 \times 600 = 72 \times 6 \times 100 = 432 \times 100 = 43200$
(k) $83 \times 900 = 83 \times 9 \times 100 = 747 \times 100 = 74700$
(l) $44 \times 700 = 44 \times 7 \times 100 = 308 \times 100 = 30800$

Sol.3. (a) 10, (b) 100, (c) 100, (d)1000, (e) 10, (f) 100

Sol.4. (a) $16 \times 600 \times 3 = 16 \times 1800$
$= (16 \times 18) \times 100 = 288 \times 100 = 28800$
(b) $14 \times 10 \times 20 = 14 \times 200$
$= (14 \times 2) \times 100 = 28 \times 100 = 2800$
(c) $6 \times 70 \times 10 = (6 \times 7) \times 100$
$= 42 \times 100 = 4200$

Test Prep 6.5

Sol.1.

(a) H T O	(b) H T O	(c) H T O
2 7	8 2	9 5
× 1 8	× 4 6	× 5 3
2 1 6	4 9 2	2 8 5
2 7 0	3 2 8 0	4 7 5 0
4 8 6	3 7 7 2	5 0 3 5

Sol.2.

(a)	(b)	(c)
9 6	7 4	7 8
× 5 2	× 3 9	× 4 6
1 9 2	6 6 6	4 6 8
4 8 0 0	2 2 2 0	3 1 2 0
4 9 9 2	2 8 8 6	3 5 8 8

(d)	(e)	(f)
7 9	7 4	3 5
× 2 4	× 3 9	× 7 4
3 1 6	3 3 6	1 4 0
1 5 8 0	4 8 0	2 4 5 0
1 8 9 6	8 1 6	2 5 9 0

(g)	(h)	(i)
5 9	7 5	6 7
× 3 7	× 5 8	× 5 6
4 1 3	6 0 0	4 0 2
1 7 7 0	3 7 5 0	3 3 5 0
2 1 8 3	4 3 5 0	3 7 5 2

Test Prep 6.6

Sol.1.

(a) Th H T O	(b) Th H T O	(c) Th H T O
3 1 9	1 8 4	4 6 5
× 1 5	× 2 6	× 2 1
1 5 9 5	1 1 0 4	4 6 5
3 1 9 0	3 6 8 0	9 3 0 0
4 7 8 5	4 7 8 4	9 7 6 5

Sol.2.

(a)	(b)	(c)
2 4 7	3 0 4	2 8 9
× 3 4	× 2 3	× 2 8
9 8 8	9 1 2	2 3 1 2
7 4 1 0	6 0 8 0	5 7 8 0
8 3 9 8	6 9 9 2	8 0 9 2

(d)	(e)	(f)
1 9 9	4 0 7	3 8 5
× 4 7	× 1 6	× 2 4
1 3 9 3	2 4 4 2	1 5 4 0
7 9 6 0	4 0 7 0	7 7 0 0
9 3 5 3	6 5 1 2	9 2 4 0

Test Prep 6.7

Sol.1. No. of people in a bus = 48
No. of people in 76 buses = 48 × 76
= 3648

```
  48
× 76
----
 288
3360
----
3648
```

Sol.2. No. of beads in 1 chain = 135
No. of beads in 36 chains = 135 × 36
= 2160

```
 135
× 36
----
 810
1350
----
2160
```

Sol.3. Cost of 1 chair = 175 rupees
Cost of 34 chairs = 175 × 34 rupees
= 5950 rupees

```
 175
× 34
----
 700
5250
----
5950
```

Sol.4. No. of bags in a truck = 79
No. of bags in 97 trucks = 79 × 97
= 7663 rupees

```
  79
× 97
----
 553
7110
----
7663
```

Sol.5. Cost of 1 bedsheet = ₹ 149

cost of 32 bedsheets = ₹ 149 × 32

= ₹ 4768 rupees

```
  149
 × 32
 ----
  298
 4470
 ----
 4768
 ----
```

Sol.6. No. of pencils in 1 packet = 184

cost of 32 bedsheets =184 × 24

= 4416

```
  184
 × 24
 ----
  736
 3680
 ----
 4416
 ----
```

Sol.7. Earning of 1 day = ₹ 1250

Earning of 8 days = ₹ 1250 × 8

= ₹ 10,000

```
 1250
  × 8
 -----
10000
-----
```

Sol.8. Total collection = ₹ 1045 × 6

Earning of 8 days = ₹ 6370

= ₹ 10,000

```
 1045
  × 6
 ----
 6370
 ----
```

Test Prep 6.8

Teachers and students are advised to create word problems in their own words.

Creative Activity

Sol. Across ⟶

B. $21 \times 13 = 273$

D. $17 \times 39 = 663$

F. $37 \times 24 = 888$

G. $329 \times 20 = 6580$

Down ↓

A. $28 \times 31 = 868$

B. $53 \times 45 = 2385$

C. $236 \times 15 = 3540$

E. $49 \times 14 = 686$

	A 8		B 2	7	C 3
	D 6	E 6	3		5
	F 8	8	8		4
		96	5	8	0

Maths Skills

Sol. 1. (a) $8 \times 7 = 7 \times 8$ (b) $6 \times 5 = 5 \times 6$

(c) $3 \times 4 = 4 \times 3$ (d) $2 \times 4 = 4 \times 2$

(e) $7 \times 1 = 7$ (f) $1 \times 8 = 8$

(g) $9 \times 1 = 9$ (h) $8 \times 0 = 0$

(i) $0 \times 6 = 0$

(j) $3 \times (5 \times 7) = (3 \times 5) \times 7$

(k) $6 \times (30 + 9) = (6 \times 30) + (6 \times 9)$

Sol.2. (a) $689 \times 10 = 6890$

(b) $84 \times 100 = 8400$

(c) $7 \times 1000 = 7000$

(d) $74 \times 40 = 74 \times 4 \times 10 = 296 \times 10 = 2960$

(e) $61 \times 60 = 61 \times 6 \times 10 = 366 \times 10 = 3660$

(f) $38 \times 200 = 38 \times 2 \times 100 = 76 \times 100 = 7600$

(g) $27 \times 300 = 27 \times 3 \times 100 = 81 \times 100$

$= 8100$

(h) $14 \times 600 = 14 \times 6 \times 100 = 84 \times 100$

$= 8400$

(i) $15 \times 800 = 15 \times 8 \times 100 = 120 \times 100$

$= 12000$

Sol.3.

(a)
```
  649
  × 9
 ----
 5841
 ----
```

(b)
```
  468
  × 8
 ----
 7744
 ----
```

(c)
```
  835
  × 4
 ----
 5845
 ----
```

(d)
```
 1234
  × 2
 ----
 2474
 ----
```

(e)
```
 1078
  × 8
 ----
 8624
 ----
```

(f)
```
 1009
  × 9
 ----
 9081
 ----
```

Sol.4.

(a)
```
  35
 × 17
 ----
  245
  350
 ----
  595
 ----
```

(b)
```
  52
 × 48
 ----
  416
 2080
 ----
 2496
 ----
```

(c)
```
  68
 ×42
 ----
  136
 2720
 ----
 2856
 ----
```

(d)
```
  705
  × 13
 -----
 2115
 7050
 -----
 9165
 -----
```

(e)
```
  628
 × 416
 -----
 3140
 6280
 -----
 9420
 -----
```

(f)
```
  272
 × 36
 ----
 1632
 8160
 ----
 9792
 ----
```

Sol.5. Rice in 1 bag = 35 Kg
Rice in 256 bags = 256 × 35 Kg
= 8960 Kg

$$\begin{array}{r} 256 \\ \times\ 35 \\ \hline 1280 \\ 7680 \\ \hline 8960 \end{array}$$

Sol.6. Weight of a book = 1250 g
Weight of 7 books = 1250 × 7 g
= 8750 g

$$\begin{array}{r} 1250 \\ \times\ 7 \\ \hline 8750 \end{array}$$

HOTS

A = 7 Birds and B = 5 Birds

Maths Olympiad

Sol.1. (b) , **Sol.2.** (a), **Sol.3.** (d), **Sol.4.** (a)

Sol.5.

$$\begin{array}{r} 999 \\ \times\ 7 \\ \hline 8991\ (c) \end{array}$$

Sol.6. 9 × 8 × 7 = 8 × 9 × 7 = 504 (c)

Rnk-6- (d)

Chapter-7
Division

Test Prep 7.1

Sol.1

(a)

16	
− 4	← ①
12	
− 4	← ②
8	
− 4	← ③
4	
− 4	← ④
0	

∴ Quotient = 4

(b)

25	
− 5	← ①
20	
− 5	← ②
15	
− 5	← ③
10	
− 5	← ④
0	

∴ Quotient = 4

(c)

42	
− 6	← ①
36	
− 6	← ②
30	
− 6	← ③
24	
− 6	← ④
18	
− 6	← ⑤
12	
− 6	← ⑥
6	
− 6	← ⑦
0	

∴ Quotient = 7

(d)

56	
− 7	← ①
49	
− 7	← ②
42	
− 7	← ③
35	
− 7	← ④
28	
− 7	← ⑤
21	
− 7	← ⑥
14	
− 7	← ⑦
7	
− 7	← ⑧
0	

∴ Quotient = 8

(e)

72	
− 8	← ①
64	
− 8	← ②
56	
− 8	← ③
48	
− 8	← ④
40	
− 8	← ⑤
32	
− 8	← ⑥
24	
− 8	← ⑦
16	
− 8	← ⑧
8	
− 8	← ⑨
0	

∴ Quotient = 9

(f)

36	
− 9	← ①
27	
− 9	← ②
18	
− 9	← ③
9	
− 9	← ④
0	

∴ Quotient = 4

Sol.2 (a) $4 \times 9 = 36 \begin{cases} \nearrow 36 \div 4 = 9 \\ \searrow 36 \div 9 = 4 \end{cases}$

(b) $8 \times 5 = 40 \begin{cases} \nearrow 40 \div 8 = 5 \\ \searrow 40 \div 5 = 8 \end{cases}$

(c) $7 \times 4 = 28 \begin{cases} \nearrow 28 \div 7 = 4 \\ \searrow 28 \div 4 = 7 \end{cases}$

(d) $3 \times 8 = 24 \begin{cases} \nearrow 24 \div 3 = 8 \\ \searrow 24 \div 8 = 3 \end{cases}$

(e) $9 \times 7 = 63 \begin{cases} \nearrow 63 \div 9 = 7 \\ \searrow 63 \div 7 = 9 \end{cases}$

(f) $5 \times 6 = 30 \begin{cases} \nearrow 30 \div 5 = 6 \\ \searrow 30 \div 6 = 5 \end{cases}$

Sol.3 (a) $56 \div 8 = 7 \begin{cases} \nearrow 8 \times 7 = 56 \\ \searrow 7 \times 8 = 56 \end{cases}$

(b) $25 \div 5 = 5 \longrightarrow 5 \times 5 = 25$

(c) $72 \div 8 = 9 \begin{cases} \nearrow 8 \times 9 = 72 \\ \searrow 9 \times 8 = 72 \end{cases}$

(d) $45 \div 9 = 5 \begin{cases} \nearrow 9 \times 5 = 45 \\ \searrow 5 \times 9 = 45 \end{cases}$

(e) $48 \div 6 = 8 \begin{cases} \nearrow 6 \times 8 = 48 \\ \searrow 8 \times 6 = 48 \end{cases}$

(f) $44 \div 11 = 4 \begin{cases} \nearrow 11 \times 4 = 44 \\ \searrow 4 \times 11 = 44 \end{cases}$

Sol.4 (a) $217 \div 217 = 1$

(b) $0 \div 2075 = 0$

(c) $905 \div 905 = 1$

(d) $152 \div 1 = 152$

(e) $0 \div 888 = 0$

(f) $5260 \div 1 = 5260$

Test Prep 7.2

Sol.1. (a)
$$\begin{array}{r} 8 \\ 4\overline{)32} \\ -\,32 \\ \hline 0 \end{array}$$

Thus, $32 \div 4 = 8$

(b)
$$\begin{array}{r} 24 \\ 2\overline{)48} \\ -\,4 \\ \hline 08 \\ -8 \\ \hline 0 \end{array}$$

Thus, $48 \div 2 = 24$

(c)
$$\begin{array}{r} 31 \\ 3\overline{)93} \\ -\,9 \\ \hline 03 \\ -3 \\ \hline 0 \end{array}$$

Thus, $93 \div 3 = 31$

(d)
$$\begin{array}{r} 16 \\ 4\overline{)64} \\ -\,4 \\ \hline 24 \\ -24 \\ \hline 0 \end{array}$$

Thus, $64 \div 4 = 16$

(e)
$$\begin{array}{r} 18 \\ 3\overline{)54} \\ -\,3 \\ \hline 24 \\ -24 \\ \hline 0 \end{array}$$

Thus, $54 \div 3 = 18$

(f)
$$\begin{array}{r} 15 \\ 5\overline{)75} \\ -\,5 \\ \hline 25 \\ -25 \\ \hline 0 \end{array}$$

Thus, $75 \div 5 = 15$

(g)
$$\begin{array}{r} 13 \\ 6\overline{)78} \\ -\,6 \\ \hline 18 \\ -18 \\ \hline 0 \end{array}$$

Thus, $78 \div 6 = 13$

(h)
$$\begin{array}{r} 13 \\ 7\overline{)91} \\ -\,7 \\ \hline 21 \\ -21 \\ \hline 0 \end{array}$$

Thus, $91 \div 7 = 13$

Sol.2. (a)
$$\begin{array}{r} 13 \\ 5\overline{)68} \\ -\,5 \\ \hline 18 \\ -15 \\ \hline 3 \end{array}$$

$\therefore$ Quotient = 13, remainder = 3

Checking

Quotient × Divisor + Remainder

$= 13 \times 5 + 3$

= 65 + 3 = 68 = Dividend

Thus, answer is correct.

(b)
$$\begin{array}{r} 14 \\ 4\overline{)57} \\ -5 \\ \hline 17 \\ -16 \\ \hline 1 \end{array}$$

∴ Quotient = 14, remainder = 1

Checking

= 14 × 4 + 1 = 56 + 1 = 57 = Dividend

Thus, answer is correct.

(c)
$$\begin{array}{r} 14 \\ 6\overline{)89} \\ -6 \\ \hline 29 \\ -24 \\ \hline 5 \end{array}$$

∴ Quotient = 14, remainder = 5

Checking

= 14 × 6 + 5 = 84 + 5 = 89 = Dividend

Thus, answer is correct.

(d)
$$\begin{array}{r} 18 \\ 4\overline{)73} \\ -4 \\ \hline 33 \\ -32 \\ \hline 1 \end{array}$$

∴ Quotient = 18, remainder = 1

Checking

= 18 × 4 + 1 = 72 + 1 = 73 = Dividend

Thus, answer is correct.

(e)
$$\begin{array}{r} 12 \\ 8\overline{)99} \\ -8 \\ \hline 19 \\ -16 \\ \hline 3 \end{array}$$

∴ Quotient = 12, remainder = 3

Checking

= 12 × 8 + 3 = 96 + 3 = 99 = Dividend

Thus, answer is correct.

(f)
$$\begin{array}{r} 16 \\ 3\overline{)49} \\ -3 \\ \hline 19 \\ -18 \\ \hline 1 \end{array}$$

∴ Quotient = 16, remainder = 1

Checking

= 16 × 3 + 1 = 48 + 1 = 49 = Dividend

Thus, answer is correct.

(g)
$$\begin{array}{r} 15 \\ 5\overline{)79} \\ -5 \\ \hline 29 \\ -25 \\ \hline 4 \end{array}$$

∴ Quotient = 15, remainder = 4

Checking

= 15 × 5 + 4 = 75 + 4 = 79 = Dividend

Thus, answer is correct.

(h)
$$\begin{array}{r} 11 \\ 7\overline{)81} \\ -7 \\ \hline 11 \\ -7 \\ \hline 4 \end{array}$$

∴ Quotient = 15, remainder = 4

Checking

= 11 × 7 + 4 = 77 + 4 = 81 = Dividend

Thus, answer is correct.

Sol.3. Bottles in 3 crates = 63

Bottles in 1 crate = 63 ÷ 3 = 21

$$\begin{array}{r} 21 \\ 3\overline{)63} \\ -6 \\ \hline 03 \\ -3 \\ \hline 0 \end{array}$$

Sol.4. Cost of pencils = ₹ 96

Cost of 1 pencil = ₹ 96 ÷ 8 = ₹ 12

$$8\overline{)96}\ 12,\quad -8,\quad 16,\quad -16,\quad 0$$

Sol.6. Total seats = 52

No. of rows = 52 ÷ 4 = 13

$$4\overline{)52}\ 13,\quad -4,\quad 12,\quad -12,\quad 0$$

Test Prep 7.3

Sol.1. (a) $2\overline{)246}\ 123,\quad -2,\quad 4,\quad -4,\quad 6,\quad -6,\quad 0$

∴ Quotient = 123

(b) $3\overline{)306}\ 102,\quad -3,\quad 06,\quad -6,\quad 0$

∴ Quotient = 102

(c) $8\overline{)920}\ 115,\quad -8,\quad 12,\quad -8,\quad 40,\quad -40,\quad 0$

∴ Quotient = 115

(d) $7\overline{)805}\ 115,\quad -7,\quad 10,\quad -7,\quad 35,\quad -35,\quad 0$

∴ Quotient = 115

(e) $5\overline{)965}\ 193,\quad -5,\quad 46,\quad -45,\quad 15,\quad -15,\quad 0$

∴ Quotient = 193

(f) $7\overline{)847}\ 121,\quad -7,\quad 14,\quad -14,\quad 07,\quad -7,\quad 0$

∴ Quotient = 121

Sol.2. (a) $6\overline{)487}\ 81,\quad 48,\quad 07,\quad -6,\quad 1$

Quotient = 81

Remainder = 1

(b) $9\overline{)479}\ 57,\quad -45,\quad 29,\quad -27,\quad 2$

Quotient = 57

Remainder = 2

(c) $9\overline{)615}\ 68,\quad -54,\quad 75,\quad -72,\quad 3$

Quotient = 68

Remainder = 3

(d) $5\overline{)576}\ 115,\quad -5,\quad 7,\quad -5,\quad 26,\quad -25,\quad -1$

Quotient = 115

Remainder = 1

(e) $6\overline{)159}\ 26,\quad -12,\quad 39,\quad -36,\quad 3$

Quotient = 26

Remainder = 3

(f) $8\overline{)854}\ 106,\quad -8,\quad 54,\quad -48,\quad 6$

Quotient = 106

Remainder = 6

Sol.3. Total pictures = 560

Pictures on a page = 5

No. of pages required = 560 ÷ 5 = 112

$$5\overline{)560}\ 112,\quad -5,\quad 6,\quad -5,\quad 10,\quad -10,\quad 0$$

Sol.4. Total eggs = 992

No. of customers = 992 ÷ 8 = 124

$$8\overline{)992}\ 124,\quad -8,\quad 19,\quad -16,\quad 32,\quad -32,\quad 0$$

Sol.5. Total apples = 539
No. of boxes = 9
No. of apples in each box = 539 ÷ 9
= 59
Remaining apples = 8

$$\begin{array}{r} 59 \\ 9\overline{)539} \\ -45 \\ \hline 89 \\ -81 \\ \hline 8 \end{array}$$

Sol.6. Total chairs = 227
No. of rows = 7
No. of chairs in each row = 227 ÷ 7
= 32
Remaining chairs = 3

$$\begin{array}{r} 32 \\ 7\overline{)227} \\ -21 \\ \hline 17 \\ -14 \\ \hline 3 \end{array}$$

Test Prep 7.4

Sol.1. (a)
$$\begin{array}{r} 1867 \\ 3\overline{)5601} \\ -3 \\ \hline 26 \\ -24 \\ \hline 20 \\ -18 \\ \hline 21 \\ -21 \\ \hline 0 \end{array}$$

Quotient = 1867

(b)
$$\begin{array}{r} 1234 \\ 2\overline{)2468} \\ -2 \\ \hline 4 \\ -4 \\ \hline 6 \\ -6 \\ \hline 8 \\ -8 \\ \hline 0 \end{array}$$

Quotient = 1234

(c)
$$\begin{array}{r} 1152 \\ 7\overline{)8064} \\ -7 \\ \hline 10 \\ -7 \\ \hline 36 \\ -35 \\ \hline 14 \\ -14 \\ \hline 0 \end{array}$$

Quotient = 1152

(d)
$$\begin{array}{r} 1294 \\ 8\overline{)9872} \\ -2 \\ \hline 18 \\ -16 \\ \hline 27 \\ -24 \\ \hline 32 \\ -32 \\ \hline 0 \end{array}$$

Quotient = 1234

(e)
$$\begin{array}{r} 897 \\ 7\overline{)8073} \\ -72 \\ \hline 87 \\ -81 \\ \hline 63 \\ -63 \\ \hline 0 \end{array}$$

Quotient = 897

(f)
$$\begin{array}{r} 986 \\ 6\overline{)5916} \\ -54 \\ \hline 51 \\ -48 \\ \hline 36 \\ -36 \\ \hline 0 \end{array}$$

Quotient = 986

Sol.2. (a)
$$\begin{array}{r} 1548 \\ 5\overline{)7742} \\ -5 \\ \hline 27 \\ -25 \\ \hline 24 \\ -20 \\ \hline 42 \\ -40 \\ \hline 2 \end{array}$$

Quotient = 1548
Remainder = 2

(b)
$$\begin{array}{r} 2385 \\ 4\overline{)9541} \\ -8 \\ \hline 15 \\ -12 \\ \hline 34 \\ -32 \\ \hline 21 \\ -20 \\ \hline 1 \end{array}$$

Quotient = 2385
Remainder = 1

(c)
$$\begin{array}{r} 1095 \\ 8\overline{)8763} \\ -8 \\ \hline 76 \\ -72 \\ \hline 43 \\ -40 \\ \hline 3 \end{array}$$

Quotient = 1095
Remainder = 3

(d)
$$\begin{array}{r} 800 \\ 7\overline{)5603} \\ -56 \\ \hline 003 \end{array}$$

Quotient = 800
Remainder = 3

(e)
$$\begin{array}{r} 945 \\ 6\overline{)5672} \\ -54 \\ \hline 27 \\ -24 \\ \hline 32 \\ -30 \\ \hline 2 \end{array}$$

(f)
$$\begin{array}{r} 836 \\ 9\overline{)7525} \\ -72 \\ \hline 32 \\ -27 \\ \hline 55 \\ -54 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 755 \\ 7\overline{)5288} \\ -49 \\ \hline 38 \\ -35 \\ \hline 38 \\ -35 \\ \hline 3 \end{array}$$

Quotient = 945 Quotient = 834

Remainder = 2 Remainder = 1

Sol.3. (a) $80 \div 10$ (b) $652 \div 10$

Quotient = 8 Quotient = 65

Remainder = 0 Remainder = 2

(c) $371 \div 10$ (d) $4516 \div 10$

Quotient = 37 Quotient = 451

Remainder = 1 Remainder = 6

(e) $3560 \div 10$ (f) $10000 \div 10$

Quotient = 356 Quotient = 1000

Remainder = 0 Remainder = 0

Sol.4. Total plants = 1256

No. of rows = 8

No. of plants in each row

= $1256 \div 8 = 157$

$$\begin{array}{r} 157 \\ 8\overline{)1256} \\ -8 \\ \hline 45 \\ -40 \\ \hline 56 \\ -56 \\ \hline 0 \end{array}$$

Sol.5. Total people = 2865

No. of bogies = 5

No. of people in each bogie

= $1256 \div 5 = 573$

$$\begin{array}{r} 573 \\ 5\overline{)2865} \\ -25 \\ \hline 36 \\ -35 \\ \hline 15 \\ -15 \\ \hline 0 \end{array}$$

Sol.6. Total bulbs = 5288

No. of cartons = 7

No. of bulbs in each carton = $5288 \div 7 = 755$

Remaining bulbs = 3

Test Prep 7.5

Teachers and students are advised to create word problems in their own words.

Creative Activity

Sol.

- $4 \boxtimes 2 \div 1 = 8$
- $7 \boxtimes 4 \div 2 = 14$
- $10 \div 5 \boxtimes 3 = 6$
- $12 \div 3 \boxtimes 4 = 16$
- $3 \boxtimes 4 \div 2 = 6$
- $3 \boxtimes 4 \div 6 = 2$
- $8 \div 2 \boxtimes 3 = 12$
- $15 \div 3 \boxtimes 2 = 10$

Maths Skills

Sol.1. (a)

$$\begin{array}{r} 24 \\ -8 \quad \leftarrow (1) \\ \hline 16 \\ -8 \quad \leftarrow (2) \\ \hline 8 \\ -8 \quad \leftarrow (3) \\ \hline 0 \end{array}$$

$24 \div 8 = 3$

(b)

$$\begin{array}{r} 27 \\ -9 \quad \leftarrow (1) \\ \hline 18 \\ -9 \quad \leftarrow (2) \\ \hline 9 \\ -9 \quad \leftarrow (3) \\ \hline 0 \end{array}$$

$27 \div 9 = 3$

(c)

$$\begin{array}{r} 30 \\ -5 \quad \leftarrow (1) \\ \hline 25 \\ -5 \quad \leftarrow (2) \\ \hline 20 \\ -5 \quad \leftarrow (3) \\ \hline 15 \\ -5 \quad \leftarrow (4) \\ \hline 10 \\ -5 \quad \leftarrow (5) \\ \hline 5 \\ -5 \quad \leftarrow (6) \\ \hline 0 \end{array}$$

Sol.2. (a) $9 \times 2 = 18 \begin{cases} \nearrow 18 \div 9 = 2 \\ \searrow 18 \div 2 = 9 \end{cases}$

(b) $7 \times 4 = 28 \begin{cases} \nearrow 28 \div 7 = 4 \\ \searrow 28 \div 4 = 7 \end{cases}$

(c) $8 \times 5 = 40 \begin{cases} \nearrow 40 \div 8 = 5 \\ \searrow 40 \div 5 = 8 \end{cases}$

Sol.3. (a) $21 \div 3 = 7 \begin{cases} \nearrow 3 \times 7 = 21 \\ \searrow 7 \times 3 = 21 \end{cases}$

(b) $25 \div 5 = 5 \longrightarrow 5 \times 5 = 25$

(c) $54 \div 6 = 9 \begin{cases} \nearrow 6 \times 9 = 54 \\ \searrow 9 \times 6 = 54 \end{cases}$

Sol.4. (a)
$$\begin{array}{r} 121 \\ 3\overline{)\,363} \\ -3 \\ \hline 6 \\ -6 \\ \hline 3 \\ -3 \\ \hline 0 \end{array}$$

$\therefore$ Quotient = 121

(b)
$$\begin{array}{r} 102 \\ 4\overline{)\,408} \\ -4 \\ \hline 08 \\ -8 \\ \hline 0 \end{array}$$

$\therefore$ Quotient = 102

(c)
$$\begin{array}{r} 1302 \\ 2\overline{)\,2604} \\ -2 \\ \hline 6 \\ -6 \\ \hline 04 \\ -4 \\ \hline 0 \end{array}$$

$\therefore$ Quotient = 1302

Sol.5. Total buttons = 72
Buttons on one shirt = 6
No. of shirts = 72 ÷ 6 = 12

Sol.6. Total time = 36
No. of Chapati = 36 ÷ 4 = 9

Sol.7. Cost of 9 shirts = ₹ 864
Cost of 1 shirt = ₹ 864 ÷ 9
= ₹ 96

Sol.8. Total pencils = 144
No. of bundles = 144 ÷ 10 = 14
and pencils left = 4

Sol.9. Total books = 408
No. of books each bay will get = 408 ÷ 10
= 40
and 8 books are left

Sol.10. Total amount = ₹ 4820
Cost of 1 book = ₹ 9
No. of books = ₹ (4820 ÷ 9)
= ₹ 535 and ₹ 5 are left.

Maths Olympaid

Sol.1. (b)
$$\begin{array}{r} 23 \\ 4\overline{)\,94} \\ -8 \\ \hline 14 \\ -12 \\ \hline 2 \end{array}$$

Sol.2. (d) 12 ÷ 3 = 4, 24 ÷ 6 = 4, 36 ÷ 9 = 4,
15 ÷ 5 = 3

Sol.3. (b)
$$\begin{array}{r} 13 \\ 7\overline{)\,91} \\ -7 \\ \hline 21 \\ -21 \\ \hline 0 \end{array}$$

Sol.4. (d)
$$\begin{array}{r} 54 \\ 8\overline{)\,437} \\ -40 \\ \hline 37 \\ -32 \\ \hline 5 \end{array}$$

Sol.6. (c)

Chapter-8
Vedic Mathematics

Test Prep 8.1

Sol.1. (a) $\dot{3} = 3 + 1 = 4$ (b) $\dot{2} = 2 + 1 = 3$
(c) $\dot{8} = 8 + 1 = 9$ (d) $\dot{6} = 6 + 1 = 7$
(e) $\dot{5} = 5 + 1 = 6$ (f) $2\dot{0} = 20 + 1 = 21$
(g) $\dot{3}4 = 34 + 10 = 44$ (h) $\dot{6}9 = 69 + 10 = 79$
(i) $\dot{8}3 = 83 + 10 = 93$ (j) $\dot{5}2 = 52 + 10 = 62$
(k) $\dot{6}6 = 66 + 10 = 76$ (l) $\dot{4}7 = 47 + 10 = 57$
(m) $\dot{8}9 = 89 + 10 = 99$ (n) $\dot{9}3 = 93 + 10 = 103$
(o) $\dot{9}9 = 99 + 10 = 109$ (p) $\dot{7}1 = 71 + 10 = 81$

Sol.2. (a) $\overset{\bullet}{4} = 4 - 1 = 3$ (b) $\overset{\bullet}{19} = 19 - 1 = 18$

(c) $\overset{\bullet}{6} = 6 - 1 = 5$ (d) $\overset{\bullet}{8} = 8 - 1 = 7$

(e) $\overset{\bullet}{10} = 10 - 1 = 9$ (f) $\overset{\bullet}{18} = 18 - 1 = 17$

(g) $\overset{\bullet}{13} = 13 - 10 = 3$ (h) $\overset{\bullet}{34} = 34 - 10 = 24$

(i) $\overset{\bullet}{61} = 61 - 10 = 50$ (j) $\overset{\bullet}{97} = 97 - 10 = 87$

(k) $\overset{\bullet}{75} = 75 - 10 = 65$ (l) $\overset{\bullet}{87} = 87 - 10 = 77$

(m) $\overset{\bullet}{79} = 79 - 10 = 69$ (n) $\overset{\bullet}{63} = 63 - 10 = 53$

(o) $\overset{\bullet}{59} = 59 - 10 = 49$ (p) $\overset{\bullet}{90} = 90 - 10 = 80$

Creative Activity

Sol.1. (a) $\overset{\bullet}{53} = 53 - 10 = 43$ (b) $3\dot{1} = 31 + 1 = 32$

(c) $4\dot{1} = 41 + 1 = 42$ (d) $\overset{\bullet}{32} = 32 - 10 = 22$

(e) $\overset{\bullet}{43} = 43 - 10 = 33$ (f) $\dot{4}2 = 42 + 10 = 52$

(g) $5\dot{2} = 52 + 1 = 53$ (h) $\dot{5}1 = 51 + 10 = 61$

Examination Preparation-I

Sol.1. (i) Numbers = 102, 120, 201, 210 (b)

(ii) (c)

(iii) 4560
+2987
7547 (c)

(iv) 15 – 14 + 13 – 12 + 11 – 10 + 9 – 8
= 1 + 1 + 1 + 1 = 4 (b)

(v) (b)

Sol.2. (a) Six thousand seven hundred thirty-eight

(b) Nine thousand four hundred fifty-two

(c) 3599 (d) 7111

Sol.3. (a) 7319

9
10
300
7000

(b) 9860

0
60
800
9000

Sol.4. (a) 1010 $\boxed{<}$ 1100 (b) 5000 $\boxed{>}$ 4999

(c) 9431 $\boxed{<}$ 9713

Sol.5. (a) Greatest number = 860, smallest number = 608

(b) Greatest number = 8753, smallest number = 3578

Sol.6. (a) 2789 (b) 3608 (c) 3580
+5634 +4795 1634
8423 8403 +807
6022

Sol.7. (a) 6398 (b) 8942 (c) 9980
−3999 −5867 −1675
2399 3075 8305

Sol.8. (a) 357 3137
+2780 −938
3137 2199

(b) 4650 5087
+437 −2385
5087 2702

Sol.9. (a) 47 (b) 225 (c) 1708
×54 ×22 ×5
188 450 8540
2350 4500
2538 4950

Sol.10. (a)
$$\begin{array}{r} 252 \\ 3\overline{)756} \\ -6 \\ \hline 15 \\ -15 \\ \hline 6 \\ -6 \\ \hline 0 \end{array}$$

(b)
$$\begin{array}{r} 896 \\ 9\overline{)8064} \\ -72 \\ \hline 86 \\ -81 \\ \hline 54 \\ -54 \\ \hline 0 \end{array}$$

(c)
$$\begin{array}{r} 1572 \\ 6\overline{)9432} \\ -6 \\ \hline 34 \\ -30 \\ \hline 43 \\ -42 \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

Sol.11. (a) Descending order is:
3602, 3062, 2306, 1206, 402, 203

(b) Descending order is:
6765, 6756, 6675, 6657, 6576, 6567

Sol.12. 580
3698
+5988
10266
Ten Thousand two hundred sixty-six

Sol.13. Total students = 9340
Passed studetns = – 6598
Failed students = 2742

Sol.14. Total slices = $12 \times 6 = 72$
Radhika and her friends ate = $3 + 8 \times 4 = 35$
Slices left = $72 - 35 = 37$

Sol.15. Total students = 4568
Students on a bench = 8
No. of benches required = $4568 \div 8$

$$\begin{array}{r} 236 \\ 8\overline{)4568} \\ -40 \\ \hline 56 \\ -56 \\ \hline 8 \\ -8 \\ \hline 0 \end{array}$$

Sol.16. Milk sold in 10 days = 1410 litres
Milk sold in 1 day = $(1410 \div 10)$
= 141 litres

Sol.17. (a) $24 \times 1 = 24$ (b) $61 \times 0 = 0$
(c) $15 \times 8 = 120$ (d) $15 \times 5 = 75$
(e) $96 \times 10 = 960$ (f) $86 \times 100 = 8600$

Sol.18. Teachers and students are advised to create wood problems in their own words.

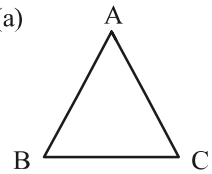
Chapter-9
Geometrical Shapes

Test Prep 9.1

Sol.1. (a) M——————N
Line segment MN or $\overline{MN}$.

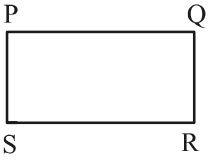
Sol. 2. PQR

Sol.3. (a)



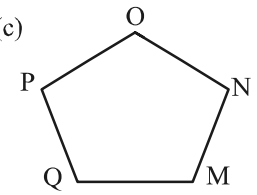
AB, BC, CA

(b)



PQ, QR, RS, SP

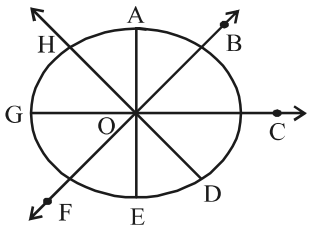
(c)



OP, PQ, QM, MN, NO

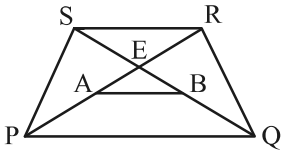
Sol.4. (a) A line segment has <u>two</u> end points.
(b) A line segment has a <u>definite</u> length.
(c) A line has <u>no</u> end point.
(d) A line AB is represented by $\overrightarrow{AB}$.
(e) A ray has <u>one</u> end point.
(f) A ray AB is represented by $\overrightarrow{AB}$.

Sol.5.



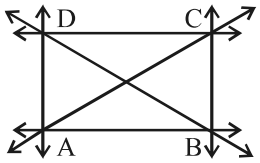
Rays = $\overrightarrow{GC}$, $\overrightarrow{DH}$
Line Segment = $\overline{AE}$
Line = $\overleftrightarrow{BF}$

Sol.6.



(a) E (b) B (c) E (d) S

Sol.7.



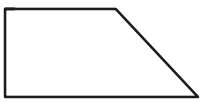
(a) DC, AB
(b) $\overleftrightarrow{AD}, \overleftrightarrow{BC}$
(c) $\overleftrightarrow{BD}, \overleftrightarrow{AC}$

Test Prep 9.2

Sol.1. Do yourself

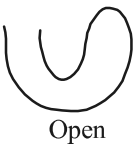
Test Prep 9.3

Sol.1. (a)



Closed

(b)



Open

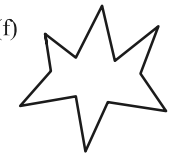
(c)

Closed

(d)

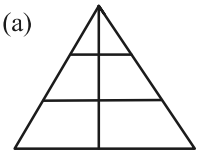
Open

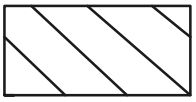
(e)  Open

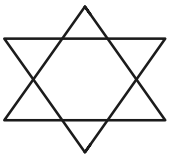
(f)  Closed

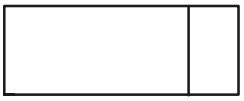
(g)  Closed

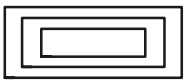
(h)  Open

Sol.2. (a)  5

(b)  4

(c)  8

Sol.3. (a)  3

(b)  3

Sol.4. (a) A blackboard → rectangle
(b) A page of the book → rectangle
(c) A postcard → rectangle
(d) The surface of the book → rectangle
(e) The wheel of a bicycle → circle
(f) A set-square in your geometry box → triangle

Sol.5. (a) A triangle has 3 sides and 3 vertices.
(b) A rectangle has 4 sides and 4 vertices.
(c) All the sides of a square are equal.
(d) The opposite sides of a ractangle are equal.
(e) A circle has 0 sides and 0 vertices.

Sol.6.

S.No.	Solid	Number of faces	Number of Plane Face	Number of curved Face	Number of edges	Number of vertice
(a)	Cuboid	6	6	0	12	8
(b)	Cube	6	6	0	12	8
(c)	Cylinder	3	2	1	2	0
(d)	Cone	2	1	1	1	1

Sol.7. (a) Only curved surface = cricket ball, football
(b) Only flat surfaces = tea packet, brick
(c) Both plane and curved surface = funnel, battery cell

Sol.8. (a) Watermelon = sphere
(b) Candle = cylinder
(c) Orange = sphere
(d) Pickle jar = cylinder
(e) Pencil box = cone

Test Prep 9.4

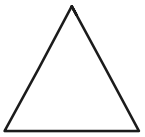
Sol.1. 3, No

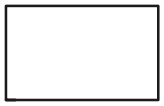
Sol.2. None

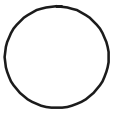
Maths Skills

Sol.1. (a) Point:A point is a lot made by a pencil.
(b) Line segment:A line segment is a part of a line.
(c) Ray:A ray is a part of a line that has a fixed starting point but no end point.

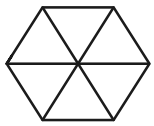
Sol.2. P, Q, R, S

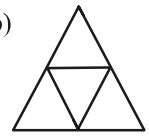
Sol.3. (a) Triangle 

(b) Rectangle 

(c) Circle 

Sol.4. (a) A line segment has two end points.
(b) A line has no end points.
(c) A line segment has a definite length,
(d) A line AB is represents by $\overleftrightarrow{AB}$.
(e) A dot (.) represents a point.
(f) A point shows a definite location.

Sol.5. (a)  6

(b)  5

Sol.6. (a) Funnel → Cone (b) Guava → Sphere

(c) Battery cell → Cyliner
(d) Garden roller → Cyliner

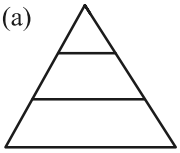
Sol.7. (a) Does a cyliner have any straight edge? No
(b) Does a sphere have any edge? No
(c) Can a rectangle have all sides equal in length ? No
(d) Can a triangle have all sides different in length ? Yes

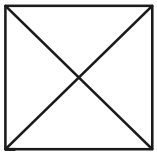
Maths Olympiad

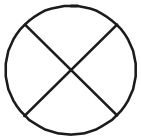
Sol.1. (c) Line segment
Sol.2. (b) Line
Sol.3. (c) Sphere
Sol.4. (c) 2
Sol.5. (b) 8, 6, 12
Sol.6. (a) Cyliner

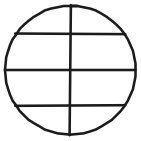
Chapter-10
Fraction

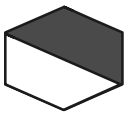
Test Prep 10.1

Sol.1. (a)  X

(b)  ✓

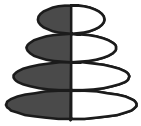
(c)  ✓

(d)  X

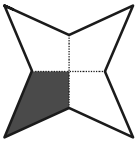
Sol.2. (a) 

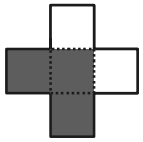
(b) 

(c) 

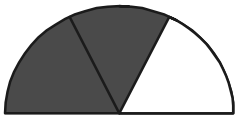
(d) 

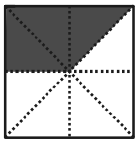
Sol.3. (a)  $\frac{1}{3}$

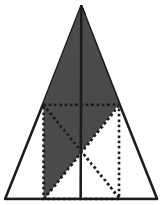
(b)  $\frac{1}{4}$

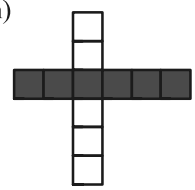
(c)  $\frac{3}{5}$

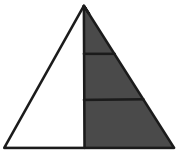
(d)  $\frac{3}{4}$

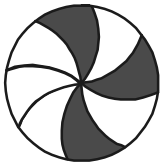
(e)  $\frac{2}{3}$

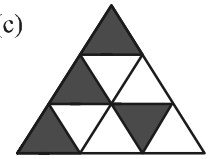
(f)  $\frac{3}{8}$

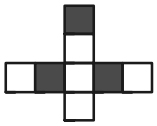
(g)  $\frac{5}{10}$

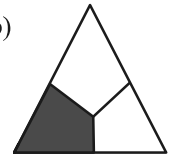
(h)  $\frac{6}{11}$

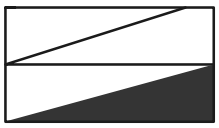
Sol.4. (a)  $\frac{1}{2}$

(b)  $\frac{3}{8}$

(c)  $\frac{4}{9}$

Sol.5. (a)  $\frac{5}{8}$

(b)  $\frac{2}{3}$

(c)  $\boxed{\frac{3}{4}}$

Sol.6. (a) one-eighth = $\frac{1}{8}$ (b) six-ninths = $\frac{6}{9}$

(c) nine-elevenths = $\frac{9}{11}$

(d) eight-twelfths = $\frac{8}{12}$

(e) Twelve-seventeenths = $\frac{12}{17}$

Sol.7. (a) $\frac{5}{11}$ = five-elevenths

(b) $\frac{9}{15}$ = nine-fifteenths

(c) $\frac{7}{12}$ = seven-twelfths

(d) $\frac{5}{9}$ = five-ninths

Sol.8. (a) In $\frac{1}{7}$ = Numerator = 1 , Deominator = 7

(b) In $\frac{7}{10}$ = Numerator = 7 , Deominator = 10

(c) In $\frac{11}{24}$ = Numerator = 11 , Deominator = 24

(d) In $\frac{10}{30}$ = Numerator = 10 , Deominator = 30

Sol.9. (a) Numerator = 5, Deominator = 9, Fraction = $\frac{5}{9}$

(b) Deominator = 3, Numerator = 7, Fraction = $\frac{7}{3}$

(c) Deominator = 20, Numerator = 9, Fraction = $\frac{9}{20}$

(d) Numerator = 24, Deominator = 25, Fraction = $\frac{24}{25}$

Sol.10. (a) In $\frac{10}{19}$, the numerator is 10.

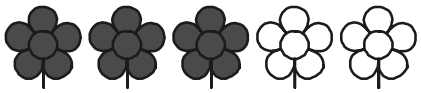
(b) In $\frac{8}{25}$, the numerator is 8.

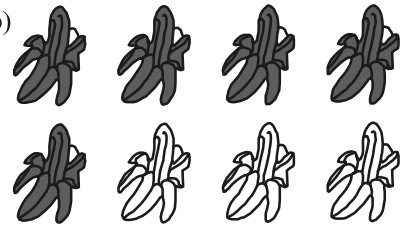
(c) In $\frac{13}{28}$, the numerator is 13.

(d) In $\frac{17}{39}$, the denominator is 39.

(e) In $\frac{16}{31}$, the numerator is 16 and the denominator is 31.

Test Prep 10.2

Sol.1. (a) 

(b) 

(c) 

Sol.2. (a) $\frac{1}{3}$ of $33 = \boxed{\frac{1}{3}\times 3 = \frac{33}{3}} = 11$

(b) $\frac{1}{2}$ of $18 = \boxed{\frac{1}{2}\times 18 = \frac{18}{2}} = 9$

(c) $\frac{1}{5}$ of $25 = \boxed{\frac{1}{5}\times 25 = \frac{25}{5}} = 5$

(d) $\frac{1}{4}$ of $56 = \boxed{\frac{1}{4}\times 56 = \frac{56}{4}} = 14$

(e) $\frac{1}{6}$ of $24 = \boxed{\frac{1}{6}\times 24 = \frac{24}{6}} = 4$

(f) $\frac{1}{7}$ of $42 = \boxed{\frac{1}{7}\times 42 = \frac{42}{7}} = 6$

Test Prep. 10.3

Sol.1. $\frac{3}{8}, \left(\frac{1}{4}\right), \frac{7}{2}, \left(\frac{1}{9}\right), \frac{29}{27}, \frac{5}{32}, \left(\frac{1}{10}\right), \left(\frac{1}{16}\right), \frac{6}{23}$

Sol.2. $\frac{14}{14}, \left(\frac{1}{10}\right), \left(\frac{6}{9}\right), \frac{18}{13}, \left(\frac{4}{8}\right), \frac{3}{2}, \left(\frac{5}{7}\right), \left(\frac{9}{11}\right), \frac{12}{10}$

Sol.3. $\frac{13}{28}, \left(\frac{21}{19}\right), \frac{10}{11}, \left(\frac{9}{5}\right), \left(\frac{18}{9}\right), \frac{1}{17}, \frac{5}{10}, \left(\frac{7}{2}\right), \left(\frac{17}{15}\right)$

Sol.4. (a) $\left(\frac{1}{3}\right)\ \frac{7}{11}\ \left(\frac{4}{3}\right)\ \frac{1}{6}\ \left(\frac{2}{3}\right)\ \frac{6}{5}\ \left(\frac{7}{3}\right)$

(b) $\left(\frac{4}{11}\right)\ \frac{5}{10}\ \left(\frac{2}{11}\right)\ \frac{6}{8}\ \left(\frac{6}{11}\right)\ \frac{5}{6}\ \left(\frac{7}{11}\right)$

(c) $\left(\frac{5}{7}\right)\left(\frac{2}{7}\right)\ \frac{1}{5}\ \left(\frac{3}{7}\right)\ \frac{4}{9}\ \frac{8}{10}\ \frac{5}{6}$

Sol.5. Since, fraction with greater numerator is greater.

(a) $\frac{5}{6} \boxed{>} \frac{4}{6}$ (b) $\frac{13}{15} \boxed{>} \frac{8}{15}$

(c) $\frac{11}{19} \boxed{<} \frac{16}{19}$ (d) $\frac{4}{6} \boxed{<} \frac{5}{6}$

(e) $\frac{3}{7} \boxed{<} \frac{6}{7}$ (f) $\frac{1}{5} \boxed{<} \frac{3}{5}$

(g) $\frac{12}{15} \boxed{<} \frac{13}{15}$ (h) $\frac{7}{8} \boxed{>} \frac{6}{8}$

(i) $\frac{2}{3} \boxed{>} \frac{1}{3}$

Sol.6. (a) $\left(\frac{7}{9}\right), \frac{2}{9}, \frac{5}{9}$ (b) $\frac{5}{12}, \frac{3}{12}, \left(\frac{9}{12}\right)$

(c) $\frac{17}{25}, \frac{21}{25}, \left(\frac{23}{25}\right)$

Sol.7. (a) Ascending order is: $\frac{1}{8}, \frac{3}{8}, \frac{4}{8}, \frac{7}{8}$

(b) Ascending order is: $\frac{1}{6}, \frac{2}{6}, \frac{3}{6}, \frac{5}{6}$

(c) Ascending order is: $\frac{5}{14}, \frac{9}{14}, \frac{12}{14}, \frac{13}{14}$

(d) Ascending order is: $\frac{1}{9}, \frac{2}{9}, \frac{5}{9}, \frac{7}{9}$

Maths Skills

Sol.1. (a) Quarter (one-fourh) = $\frac{1}{4}$

(b) Half = $\frac{1}{2}$

(c) Three-fourths = $\frac{3}{4}$

(d) One and a half = $1\frac{1}{2}$

Sol.2. (a) In $\frac{2}{7}$ = Numerator = 2, Deominator = 7

(b) In $\frac{5}{6}$ = Numerator = 5, Deominator = 6

(c) In $\frac{4}{9}$ = Numerator = 4, Deominator = 9

(d) In $\frac{7}{10}$ = Numerator = 7, Deominator = 10

Sol.3. (a) Numerator = 6, Deominator = 7, Fraction = $\frac{6}{7}$

(b) Numerator = 7, Deominator = 9, Fraction = $\frac{7}{9}$

Sol.4. (a) $\frac{1}{7}$ of $63 = \boxed{\frac{1}{7} \times 63 = \frac{63}{7}} = 9$

(b) $\frac{1}{8}$ of $64 = \boxed{\frac{1}{8} \times 64 = \frac{64}{8}} = 8$

(c) $\frac{1}{9}$ of $81 = \boxed{\frac{1}{9} \times 81 = \frac{81}{9}} = 9$

Sol.5. $\frac{4}{8}\left(\frac{5}{9}\right)\ \frac{1}{5}\ \frac{7}{10}\left(\frac{1}{9}\right)\ \frac{2}{11}\left(\frac{4}{9}\right)\ \frac{3}{7}\left(\frac{3}{9}\right)\ \frac{7}{6}$

Sol.6. (a) $\frac{3}{9} \boxed{<} \frac{5}{9}$ (b) $\frac{2}{5} \boxed{<} \frac{3}{5}$

(c) $\frac{5}{9} \boxed{>} \frac{1}{9}$

Sol.7. (a) Ascending order is: $\frac{4}{12}, \frac{5}{12}, \frac{5}{12}, \frac{8}{12}$

(b) Ascending order is: $\frac{1}{9}, \frac{3}{9}, \frac{4}{9}, \frac{5}{9}$

HOTS

Sol.1. Prachi ate = $\frac{3}{4}$ cake

Ruby ate = $\frac{1}{4}$ cake

Since, $\frac{3}{4} \boxed{>} \frac{1}{4}$

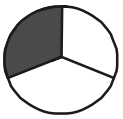
So, Prachi ate more.

Sol.2. Total balls = 18

Red balls $= \frac{1}{2} \times 18 = 9$

Blue balls $= \frac{1}{3} \times 18 = 6$

Yellow balls $= 18 - (9 + 6) = 18 - 15 = 3$

Sol.3.  $\frac{1}{3}$ is coloured, So, $\frac{2}{3}$ is left blank.

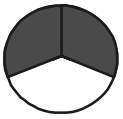
Maths Olympiad

Sol.1. (a) $\frac{1}{3}$

Sol.2. (c) $\frac{1}{7}$

Sol.3. $\frac{1}{4}$ of $20 = \frac{1}{4} \times 20 = \frac{20}{4} = 5$

Sol.4. $\frac{1}{2}$ of $18 = \frac{1}{2} \times 18 = \frac{18}{2} = 9$

Sol.5.  So $\frac{1}{3}$ is left. (a) $\frac{1}{3}$

Sol.6. Total letters = 11

Fraction $= \frac{2}{11}$ (d)

Chapter-11
Measurement

Test Prep 11.1

Sol.1. (a) The standard unit for mesuring length is metre.

(b) Kilometre is the unit for measuring longer lengths.

(c) Height of a building is measured in metre.

(d) Distance from Delhi to Ghaziabad will be measured in kilometre.

Sol.2. (a) $33\text{ m} = 33 \times 100\text{ cm} = 3300\text{ cm}$

(b) $66\text{ m} = 66 \times 100\text{ cm} = 6600\text{ cm}$

(c) $87\text{ m} = 87 \times 100\text{ cm} = 8700\text{ cm}$

(d) $25\text{ m }6\text{ cm} = 25 \times 100\text{ cm} + 6\text{ cm}$
$= 2500\text{ cm} + 6\text{ cm} = 2506\text{ cm}$

(e) $94\text{ m }40\text{ cm} = 94 \times 100\text{ cm} + 40\text{ cm}$
$= 9400\text{ cm} + 40\text{ cm} = 9440\text{ cm}$

(f) $80\text{ m }88\text{ cm} = 80 \times 100\text{ cm} + 88\text{ cm}$
$= 8000\text{ cm} + 88\text{ cm} = 8088\text{ cm}$

Sol.3. (a) $800\text{ cm} = (800 \div 100)\text{ m} = 8\text{m}$

(b) $2600\text{ cm} = (2600 \div 100)\text{ m} = 26\text{ m}$

(c) $845\text{ cm} = 800\text{ cm} + 45\text{ cm}$
$= (800 \div 100)\text{ m} + 45\text{ cm}$
$= 8\text{ m} + 45\text{ m} = 8\text{ m }45\text{ cm}$

(d) $1605\text{ cm} = 1600\text{ cm} + 5\text{ cm}$
$= (1600 \div 100)\text{ m} + 5\text{ cm}$
$= 16\text{ m} + 5\text{ cm} = 16\text{ m }5\text{ cm}$

(e) $6410\text{ cm} = 6400\text{ cm} + 10\text{ cm}$
$= (6400 \div 100)\text{m} + 10\text{ cm}$
$= 64\text{ m} + 10\text{ cm} = 64\text{ m }10\text{ cm}$
$= 64\text{ m }10\text{ cm}$

(f) $6504\text{ cm} = 6500\text{ cm} + 5\text{ cm}$
$= (6500 \div 100)\text{ m} + 5\text{ cm}$
$= 65\text{ m} + 5\text{ cm} = 65\text{ m }5\text{ cm}$

Sol.4. (a) $5\text{ km} = 5 \times 1000\text{ m} = 5000\text{ m}$

(b) $8\text{ km} = 8 \times 1000\text{ m} = 8000\text{ m}$

(c) $9\text{ km }330\text{ m} = 9 \times 1000\text{ m} + 330\text{ m}$
$= 9000\text{ m} + 330\text{ m} = 9330\text{ m}$

(b) $6\text{ km }55\text{ m} = 6 \times 1000\text{ m} + 55\text{ m}$
$= 6000\text{ m} + 55\text{ m} = 6055\text{ m}$

(e) $4\text{ km }560\text{ m} = 4 \times 1000\text{ m} + 560\text{ m}$
$= 4000\text{ m} + 560\text{ m} = 4560\text{ m}$

Sol.5. (a) $8000\text{ m} = (8000 \div 1000)\text{ km} = 8\text{ km}$

(b) $7000\text{ m} = (7000 \div 1000)\text{ km} = 7\text{ km}$

(c) $2860\text{ m} = 2000\text{ m} + 860\text{ m}$
$= (2000 \div 1000)\text{ km} + 860\text{m}$
$= 22\text{ km }860\text{ m}$

(d) $6706\text{ m} = 6000\text{ m} + 706\text{ m}$
$= (6000 \div 1000)\text{ km} + 706\text{m}$
$= 6\text{ km }706\text{ m}$

(e) $6985\text{ m} = 6000\text{ m} + 985\text{ m}$
$= (6000 \div 1000)\text{ km} + 985\text{m}$
$= 6\text{ km }985\text{ m}$

(f) $1050\text{ m} = 1000\text{ m} + 50\text{ m}$
$= 1\text{km} + 50\text{m}$
$= 1\text{km }50\text{m}$

Test Prep 11.2

Sol.1. (a)

	m	cm
	2	6 2 5
+	1	8 3 4
	4	4 5 9

(b)

	m	cm
	4	9 2 6
+	2	7 8 7
	7	7 1 3

(c)
m	cm
220	75
+412	68
633	43

(d)
km	m
38	628
+48	189
86	817

(e)
km	m
340	002
+438	104
778	106

(f)
km	m
278	305
+192	930
471	235

Sol.2. (a)
m	cm
420	82
+94	10
514	92

(b)
m	cm
254	28
+210	47
464	75

(c)
km	cm
29	56
+2	708
56	64

(d)
km	m
149	644
+110	090
259	734

Sol.3. (a)
m	cm
89	57
−23	73
65	84

(b)
m	cm
269	06
−258	87
010	19

(c)
m	cm
586	56
−475	37
111	17

(d)
km	m
8	815
−2	756
6	059

(e)
km	m
28	305
−19	216
09	089

(f)
km	m
126	265
−117	564
008	701

Sol.4. (a)
m	cm
2	46
−	78
1	68

(b)
m	cm
42	65
−	52
42	13

(c)
m	cm
625	27
−472	52
152	75

(d)
m	cm
815	97
−645	26
170	71

(e)
km	m
18	423
−16	000
02	423

(f)
km	m
184	520
−78	000
106	520

Test Prep. 11.3

Sol.1.
	km	m
Distance covered by train =	48	784
Distance covered by car = +	86	785
Total distance covered =	135	469

= 135 km 469 m

Sol.2.
	m	cm
Length of first piece =	22	76
Length of second piece = +	34	27
Total length =	57	03

= 57 m 3 cm

Sol.3.
	m	cm
Cloth merchant had =	96	85
Distance covered by car = −	78	75
Total distance covered =	18	10

= 18 m 10 cm

Sol.4.
	km	m
Total distance =	88	200
Distance covered by bus = −	68	700
Distance covered by motorcycle =	19	500

= 19km 500 cm

Sol.5. 201 km 700 m > 154 km 100 m

km	m
200	700
−154	100
Difference = 47	600

Thus, the distance between Agra and Delhi is greater than the distance between Jaipur and Delhi by 47 km 600 m.

Sol.6. Cloth given to the tailor:

m	cm
8	35
6	65
+ 4	45
19	45

= 19 m 45 m

Cloth left with Tanvay :

m	cm
26	00
−19	45
6	55

= 6m 55cm

Test Prep 11.4

Sol.1. (a) tomato — g (b) cricket ball — g
(c) a loaf of bread — g (d) pumpkin — kg
(e) book — g (f) school bag — kg
(g) chocolate bar — g (h) yourself — kg

Sol.2. (a) 12 kg = 12 × 1000 g = 12000 g
(b) 25 kg = 25 × 1000 g = 25000 g
(c) 8 kg 750g = 8 × 1000 g + 750 g = 8000g + 750g
= 8750g
(d) 23 kg 50g = 23 × 1000 g + 50 g = 2300g + 50g
= 2350g

(e) 4 kg 275g = 4 × 1000 g + 275 g = 4000g + 275g
= 4275g
(f) 8 kg 8g = 8 × 1000 g + 8 g = 8000g + 8g
= 8008g
(g) 20 kg 900g = 20 × 1000 g + 900 g
= 20000g + 900g = 20900g
(h) 2kg 973g = 2 × 1000 g + 973 g = 2000g + 973g
= 2973g

Sol.3. (a) 8000 g = (8000 ÷ 1000)kg = 8 kg
(b) 8900 g = 8000 g + 900 g = (8000 ÷ 1000)kg + 900 g = 8kg 900 g
(c) 7500 g = 7000 g + 500 g = 7 kg 500 g
(d) 9089 g = 9000 g + 89 g = 9 kg 89g
(e) 2000 g = 2kg
(f) 3906 g = 3000 g + 906 g = 3 kg 906 g
(g) 6502 g = 6000 g + 502 g = 6 kg 502 g
(h) 8956 g = 8000 g + 956 g = 8 kg 956 g

Test Prep 11.5

Sol.1. (a)

	kg	g
	24	588
+	12	847
	37	435

= 37 kg 435 g

(b)

	kg	g
	25	502
+	18	098
	43	600

= 43 kg 600 g

(c)

	kg	g
	734	507
	87	287
+	46	854
	868	648

= 868 kg 648 g

Sol.2. (a)

	kg	g
	8	396
	4	847
+	7	078
	20	321

= 20 kg 321 g

(b)

	kg	g
	25	502
+	18	098
	43	600

= 43 kg 600 g

(c)

	kg	g
	24	109
	57	298
+	3	004
	84	411

= 84 kg 411 g

(d)

	kg	g
	66	300
	417	059
+	99	008
	582	367

= 582 kg 369 g

Sol.3. (a)

	kg	g
	8	709
−	6	594
	2	115

= 2 kg 115 g

(b)

	kg	g
	22	526
−	17	578
	4	948

= 4 kg 948 g

(c)

	kg	g
	226	080
−	18	992
	207	088

= 207 kg 88 g

Sol.4. (a)

	kg	g
	68	9
−	52	8
	16	1

= 16 kg 1 g

(b)

	kg	g
	24	00
−	15	25
	8	75

= 8 kg 75 g

(c)

	kg	g
	25	003
−	14	859
	10	144

= 10 kg 144 g

(d)

	kg	g
	45	004
−	23	359
	21	645

= 21 kg 645 g

Test Prep 11.6

Sol.1.

		kg	g
Weight of first boy	=	36	850
Weight of second boy	=	+ 32	500
Total weight	=	69	350
	=	69 kg 350 g	

Sol.2.

		kg	g
Weight of flour	=	45	280
Weight of vegetables	=	+ 14	950
Total weight	=	60	230
	=	60 kg 230 g	

Sol.3.

		kg	g
Weight of pulses	=	5	500
Weight of sugar	=	+ 3	250
Total weight	=	8	750
	=	8 kg 750 g	

Sol.4.

		kg	g
Weight of fruits	=	75	500
Fruits sold	=	− 48	750
Fruits left	=	26	750
	=	26 kg 750 g	

Sol.5.

		kg	g
Weight of flour	=	88	500
Flour used	=	− 69	700
Flour left	=	18	750
	=	18 kg 750 g	

Sol.6.

		kg	g
Total vegetables	=	83	200
Vegetables used	=	− 43	500
Vegetables left	=	39	700

= 39 kg 700 g

		kg	g
Sol.7. Weight of first girl	=	3 7	3 2 5
Weight of second girl	=	+1 9	7 7 5
Weight of two girl	=	5 7	1 0 0
		kg	g
Total weight	=	8 6	0 0 0
Weight of girls	=	–5 7	1 0 0
Weight of third girl	=	2 8	9 0 0

= 28 kg 900 g

Test Prep 11.7

Sol.1. (a) A glass of milk — mL
(b) Diesel filled in a car — L
(c) A sochet of ketchup — mL
(d) Medicine in a syringe — mL
(e) A bucket full of water — L
(f) Water in a storage tank — L

Sol.2. (a) 9 L = 9 × 1000 mL = 9000 mL
(b) 13 L = 13 × 1000 mL = 13000 mL
(c) 6 L = 6 × 1000 mL = 6000 mL
(d) 6 L 200 mL = 6 × 1000 mL + 200 mL
= 6000 mL + 200 mL = 6200 mL
(e) 28 L 759 mL = 28 × 1000 mL + 759 mL
= 28000 mL + 759 mL
= 28759 mL
(f) 23 L 85 mL = 23 × 1000 mL + 85 mL
= 23000 mL + 85 mL
= 23085 mL
(g) 42 L 495 mL = 42 × 1000 mL + 495 mL
= 42000 mL + 495 mL
= 42495 mL
(h) 28 L 405 mL = 28 × 1000 mL + 405 mL
= 28000 mL + 405 mL
= 28405 mL

Sol.3. (a) 2000 mL = (2000 ÷ 1000) L = 2 L
(b) 2735 mL = 2000 mL + 735 mL = 2 L 735 mL
(c) 2453 mL = 2000 mL +453 mL = 2L 453 mL
(d) 2090 mL = 2000 mL +90 mL = 2L 90 mL
(e) 9003 mL = 9000 mL + 3 mL = 9L 3mL
(f) 5250 mL = 5000 mL +250 mL = 5L 250 mL
(g) 9089 mL = 9000 mL + 89 mL = 9 L 89 mL
(h) 9765 mL = 9000 mL +765 mL = 9 L 765 mL

Test Prep 11.8

Sol.1. (a)

L	mL
6 1	7 5 2
+ 9 1	6 2 8
1 5 3	3 8 0

= 153 L 380 mL

(b)

L	mL
2 6	2 7 5
+ 1 9	5 9 6
4 5	8 7 1

= 45 L 870 mL

(c)

L	mL
9 2	3 7 5
+ 1 8	3 3 3
1 1 0	7 0 8

= 110 L 708 mL

Sol.2. (a)

L	mL
1 7	6 2 7
9	4 3 7
+1 4	9 0 9
4 1	9 7 3

= 41 L 973 mL

(b)

L	mL
2 3	3 1 0
1 7	0 7 0
+	6 6 1
4 1	0 4 1

= 41 L 41 mL

(c)

L	mL
	8 4
1	9 0 3
+ 1	8 7 7
3	7 6 4

= 3 L 764 mL

(b)

L	mL
3 1	0 0 0
7 2	0 0 0
1 0 8	0 0 0
+ 1	4 7 9
2 2 2	4 7 9

= 222 L 479 mL

Sol.3. (a)

L	mL
5 4 0	1 0 8
–4 2 0	0 8 9
1 2 0	0 1 9

= 120 L 19 mL

(b)

L	mL
3 2	5 7 0
–2 5	2 9 0
7	2 8 0

= 7 L 280 mL

(c)

L	mL
4 9 8	4 3 3
–1 7 9	3 8 2
3 1 9	0 5 1

= 319 L 51 mL

Sol.4. (a)

L	mL
3 0	0 6 5
–1 2	1 2 4
1 8	9 4 1

= 18 L 941 mL

(b)

L	mL
8 3	1 7 0
–1 4	0 2 4
6 9	1 4 6

= 69 L 146 mL

(c)

L	mL
9 6	2 7 5
–4 6	5 2 0
4 9	7 5 5

= 49 L 755 mL

(d)

L	mL
2 3 0	0 1 5
– 9 2	1 4 2
1 3 7	9 7 3

= 137 L 973 mL

Test Prep. 11.9

Sol.1.

		L	mL
Water in the bucket	=	8	425
Water added to the bucket	= +	2	786
Total water	=	11	211

= 11 L 211 mL

Sol.2.

		L	mL
Milk bought from our source	=	19	750
Milk bought from other source	= +	25	525
Total milk	=	45	275

= 45 L 275 mL

Sol.3.

		L	mL
Orange juice	=	28	600
Mango juice	= +	38	750
Total juice	=	67	350

= 67 L 350 mL

Sol.4.

		L	mL
Capacity in tank	=	16	200
Petrol in the tank	= –	7	525
Space in the tank	=	8	675

= 8 L 675 mL

Sol.5.

		L	mL
Total oil	=	86	400
Oil transfered	= –	68	760
Oil left	=	17	640

= 17 L 640 mL

Sol.6.

		L	mL
Total juice	=	95	600
Juice sold	= –	38	850
Juice left	=	56	750

= 56 L 750 mL

Sol.7. Refined oil sold = 22 L 80 mL + 21 L 850 mL + 13 L 350 mL =

L	mL
22	080
21	850
+13	350
57	280

		L	mL
Total oil	=	80	000
Oil sold	= –	57	280
Oil left	=	42	720

= 42 L 720 mL

Maths Skills

Sol.1. (a) Water in mug = 300 mL
(b) Length of a pencil = 15 cm
(c) Height of a building = 100 m
(d) Weight of a dictionary = 1 kg
(e) Weight of shoes = 750 g
(f) Petrol in a full car tank = 40 L

Sol.2. (a)

kg	g
45	209
+ 92	956
138	165

= 138 kg 165 g

(b)

L	mL
19	085
+ 25	287
44	372

= 44 L 372 mL

(c)

m	cm
79	65
– 35	16
44	49

= 44 m 49 cm

(d)

L	mL
350	807
– 89	925
260	882

= 260 L 882 mL

Sol.3. (a) 1 km 60 m = 1000 m + 60 m = 1060 m
1060 $\boxed{<}$ 1160 m
(b) 8 km 880 m = 8000 m + 880 m = 8880 m
8880 m $\boxed{>}$ 8808 m
(c) 6 km 66 m = 6000 m + 66 m = 6066 m
6066 m $\boxed{=}$ 6066 m
(d) 20 m 50 cm = 2000 cm + 50 cm = 2050 cm
2050 cm $\boxed{<}$ 2250 m
(e) 3 km 47 m = 3000 m + 47 m = 3047 m
3047 cm $\boxed{<}$ 3370 m
(f) 8 m 90 cm = 800 cm + 90 cm = 890 cm
890 cm $\boxed{<}$ 897 cm

Sol.4.

		km	m
Distance covered by train	=	48	784
Distance covered by car	= +	86	685
Total distance	=	135	469

= 135 km 469 m

Sol.5.

		kg	g
Weight of wheat	=	8	650
Weight of tea	= +	5	476
Weight of wheat and tea	=	14	126

		kg	g
Total weight	=	27	000
Weight of wheat and tea	= –	14	126
Weight of rice	=	12	874

= 12 kg 874 g

Sol.6. Total milk = 13426 mL + 16740 mL = 30166 mL
Milk left = 30166 mL – 18520 mL = 11646 mL

HOTS

Sol.1. (30 – 20) + (30 – 20) + (30 – 20) + (30 – 20) + (30 – 20) + (30 – 20) + (30 – 20) + 30 = 100
Thus, monkey will take 8 minutes.

Sol.2.

		L	mL
Milk used for tea	=	6	225
Milk used for cheese	=	4	080
Milk used taken by child	= +	0	899
Milk used	=	11	204

= 11 L 204 mL

		L	mL
Total milk	=	1 3	8 5 0
Milk used	= –	1 1	2 0 4
Milk used for cure	=	2	6 4 6

= 2 L 646 mL

Maths Olympiad

Sol.1.

		m	cm
Length of B	=	8	0 6
Length of A	= –	6	0 9
Difference	=	1	9 7

= 1 m 97 cm (d)

Sol.2. (d)

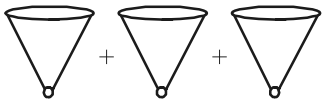
Sol.3. (a)

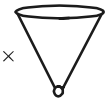
Sol.4. 3 kg + 380 g = 3000 g + 380 g = 3380 g

Sol.5.

kg	g
6	0 0 0
– 4	3 7 5
1	6 2 5

= 1 kg 625 g (a)

Sol.6. (a)  = 960 mL

3 ×  = 960 mL

 $= \frac{960}{3}$ = 320 mL (d)

		L	mL
Sol.7. Milk purchased	=	8	2 5 0
Milk used	= –	5	7 5 0
Milk left	=	2	5 0 0

= 2 L 500 mL

= 2500 mL (c)

Chapter-12
Time

Test Prep 12.1

Sol.1. (a) 

3 : 30 Half past 3

(b) 

8 : 30 Half Past 8

(c) 

5 : 30 Half past 5

(d) 

7 : 30 Half past 7

(e) 

10 : 30 Half past 10

(f) 

12 : 30 Half past 12

Sol.2. (a) 

01 : 30

(b) 

04 : 30

(c) 

06 : 30

Test Prep 12.2

Sol.1. (a) 

4 : 30 Quarter Past 4

(b) 

1 : 15 Quarter Past 1

(c) 

11 : 15 Quarter Past 11

(d) 

10 : 15 Quarter Past 10

(e) 

08 : 15 Quarter Past 8

(f) 

09 : 15 Quarter Past 9

Sol.2. (a) 

02 : 15

(b) 

07 : 15

(c) 

05 : 15

Test Prep 12.3

Sol.1. (a) 

02 : 45 Quarter to 3

(b) 

07 : 45 Quarter to 8

(c) 

04 : 45 Quarter to 5

(d) 

01 : 45 Quarter to 2

(e) 

12 : 45 Quarter to 1

(f) 

05 : 45 Quarter to 6

Sol.2. (a) 

06 : 45

(b) 

07 : 45

(c) 

09 : 45

Test Prep 12.4

Sol.1. 7:15 in the morning = 7:15 A.M.

Sol.2. 4:20 in the morning = 4:20 P.M.

Sol.3. 5:35 in the morning = 5:35 A.M.

Sol.4. 11:40 before noon = 11:40 A.M.

Sol.5. 2:10 afternoon = 2:10 P.M.

Sol.6. 1:00 afternoon = 1:00 P.M.

Sol.7. 11:55 before noon = 11:55 A.M.

Sol.8. 12:05 afternoon = 12:05 P.M.

Test Prep 12.5

Sol.1. (a) 

02 : 55

5 minutes to 3

(b) 

07 : 20

20 minutes past 7

(c) 

08 : 35

35 minutes past 8

(d) 

09 : 10

10 minutes past 9

(e) 

06 : 45

6 minutes to 7

(f) 

07 : 25

25 minutes past 7

Sol.2. (a) 

02 : 40

20 minutes to 3

(b) 

04 : 35

25 minutes to 5

(c) 

10 : 55

5 minutes to 11

(d) 

08 : 40

20 minutes to 9

(e) 

03 : 55

25 minutes to 4

(f) 

07 : 50

10 minutes to 8

Test Prep 12.6

Sol.1. (a) 9 hours = 9 × 60 minutes = 540 minutes

(b) 6 hours = 6 × 60 minutes = 360 minutes

(c) 11 hours = 11 × 60 minutes = 660 minutes

(d) 3 hours 45 minutes

= 3 × 60 minutes + 45 minutes

= 180 minutes + 45 minutes

= 225 minutes

(e) 8 hours 20 minutes
= 8 × 60 minutes + 20 minutes
= 480 minutes + 20 minutes
= 500 minutes

(f) 12 hours 35 minutes
= 12 × 60 minutes + 35 minutes
= 720 minutes + 35 minutes
= 755 minutes

Sol.2. (a) 300 minutes = $\frac{300}{60}$ hours = 5 hours

(b) 400 minutes = $\frac{400}{60}$ hours = 6 hours 40 minutes

(c) 420 minutes = $\frac{420}{60}$ hours = 7 hours

(d) 490 minutes = $\frac{490}{60}$ hours = 8 hours 10 minutes

(e) 500 minutes = $\frac{500}{60}$ hours = 8 hours 20 minutes

(f) 600 minutes = $\frac{600}{60}$ hours = 10 hours

Sol.3. 5 hours 15 minutes = 5 × 6 minutes + 15 minutes
= 300 minutes + 15 minutes = 315 minutes
Thus, Kohli batted for 315 minutes.

Sol.4. 2 hours 10 minutes = 2 × 60 minutes + 10 minutes
= 120 minutes + 10 minutes = 130 minutes
Thus, my mother spent 130 minutes in the market.

Sol.5. Robin takes 245 minutes.
Divya takes = 3 hours 15 minutes
= 3 × 60 minutes + 15 minutes
= 180 minutes + 15 minutes
Since, 195 < 245 that means Divya takes less time.
Thus, Divya travelled faster.

Test Prep 12.7

Sol.1. (a) 6 weeks = 6 × 7 days = 42 days
(b) 9 weeks 3 days = 9 × 7 days + 3 days
(c) 12 weeks 2 days = 12 × 7 days + 2 days
= 84 days + 2 days = 86 days
(d) 7 months = 7 × 30 days = 210 days
(e) 8 months 2 days = 8 × 30 days + 20 days
= 240 days + 20 days = 260 days
(f) 11 months 15 days = 11 × 30 days + 15 days
= 330 days + 15 days = 345 days

Sol.2. (a) 6 years = 6 × 12 months = 72 months
(b) 9 years = 9 × 12 months = 108 months
(c) 7 years 6 months = 7 × 12 months + 6 months
= 72 months + 6 months
= 78 months
(d) 10 years 4 months = 10 × 12 months + 4 months
= 120 months + 4 months
= 124 months
(e) 12 years 2 months = 12 × 12 months + 2 months
= (144 + 2) months
= 146 months
(f) 10 years 10 months
= (10 × 12 + 10) months
= (120 + 10) months
= 130 months

Sol.3. (a) 3 years = 3 × 365 days = 1095 days
(b) 5 years = 5 × 365 days = 1825 days
(c) 8 years = 8 × 365 days = 2920 days
(d) 1 year 26 days = 365 days + 26 days = 391 days
(e) 4 years 150 days = 4 × 365 days + 150 days
= 1460 days + 150 days
= 1610 days
(f) 9 years 200 days = 9 × 365 days + 200 days
= 3285 days + 200 days
= 3485 days

Sol.4. (a) 11 days = 11 × 24 hours = 264 hours
(b) 15 days = 15 × 24 hours = 360 hours
(c) 30 days = 30 × 24 hours = 720 hours
(d) 9 days 5 hours = 9 × 24 hours + 5 hours
= 216 hours + 5 hours
= 221 hours
(e) 20 days 4 hours = 20 × 24 hours + 4 hours
= 480 hours + 4 hours
= 484 hours
(f) 17 days 6 hours = 17 × 24 hours + 6 hours
= 408 hours + 6 hours
= 414 hours

Maths Skills

Sol.1. (a) 
06 : 40 o'clock

(b) 
07 : 00 o'clock

(c) 

06 : 00 o'clock

(d) 

02 : 45 o'clock

(e) 

02 : 30 o'clock

Sol.2. (a) The minute hand takes 15 minutes to move from 5 to 8.

(b) At 12:00 o'clock the hands will be at 12.

(c) When the time is quarter past an hour, the minute hand is always at 3.

(d) At a quarter to an hour, the minute hand is always at 9.

Sol.3. (a) Half past 8 is written as 8:15. False

(b) Quarter to 2 is written as 1:45. True

(c) At 7:30, the minute hand is between 7 and 8. False.

(d) The minute hand moves from 1 to 3 in 10 minutes. True

Sol.4. (a) 8 o'clock in the morning 8:00. A.M.

(b) 11 o'clock before noon 11:00 A.M.

(c) 3 o'clock at night 3:00 A.M.

(d) 2 o'clock in the afternoon 2:00 P.M.

(e) 12:30 afternoon 12:30 P.M.

(f) 11:45 before noon 11:45 A.M.

(g) 4:05 after midnight 4:05 A.M.

(h) 5:15 in the evening 5:15 P.M.

Sol.5. (a) 12 hours = 12 × 60 minutes = 720 minutes

(b) 2 days = 2 × 24 hours = 48 × 60 minutes
= 2880 minutes

(c) 7 hours and 25 minutes = (7 × 60 + 25) minutes
= 445 minutes

(d) 49 hours and 10 minutes = (49 × 60 + 10) minutes
= 2950 minutes

HOTS

Sol.1.
5 : 45
\+ 45
5 : 90 minutes
5 : (60 + 30) minutes
5 : = 1 h 30 min
= 6 h 30 minutes

Thus, at 6 : 30 Ram is read for school.

Sol.2.
3 : 15 P.M.
\+ 2 : 10
5 : 25 P.M.

Thus, the movie finish at 5:25 P.M.

Sol.3.
9 : 05 P.M.
\+ 0 : 20
9 : 25 P.M.

Thus, the news finish at 9:25 P.M.

Maths Olympiad

Sol.1. (a) 11:40

Sol.2. (b) 40

Sol.3. (c) 24

Sol.4. (d) November

Sol.5. (b) July

Sol.6. (b) 2016

Chapter-13
Money

Test Prep. 13.1

Sol.1. 7 rupees

Sol.2. 8 rupees

Sol.3. 65 rupees

Sol.4. 118 rupees

Sol.5. 255 rupees

Test Prep. 13.2

Sol.1. (a) 40 rupees 55 paise = Rupees forty and fifty-five paise

(b) 37 rupeees 18 paise = Rupees thirty-seven and eighteen paise

(c) 5 rupees 6 paise = Rupees five and six paise

(d) 84 paise = Eighty four paise

(e) 1007 rupees 20 paise = Rupeees one thousand seven and twenty paise

Sol.2. (a) Fifty rupees and thirty paise = ₹ 50.30

(b) Sixty-nine rupees and fifty paise = ₹ 69.50

(c) Forty-eight rupees and fifty-five paise = ₹ 48.55

(d) Thirty rupees and forty-three paise = ₹ 50.30

Sol.3. (a) 63 rupees and 75 paise = ₹ 63.75

(a) 96 rupees and 40 paise = ₹ 96.40

(c) 112 rupees and 8 paise = ₹ 112.08

(d) 510 rupees and 20 paise = ₹ 510.20

Sol.4. (a) ₹8.36 = Eight rupees and thirty six paise
(b) ₹18.05 = Eighteen rupees and five paise
(c) ₹69.50 = Sixty-nine rupees and fifty paise
(d) ₹ 62.35 = Sixty-two rupees and thirty-five paise

Test Prep. 13.3

Sol.1. (a) ₹ 6 = 600 p (b) ₹ 20 = 2000 p
(c) ₹ 7.80 = 780 p (d) ₹ 8.40 = 840 p
(e) ₹ 26.90 = 2690 p (f) ₹ 6.75 = 675 p
(g) ₹ 4 = 400 p (h) ₹ 46.50 = 4650 p

Sol.2. (a) 8005 p = ₹ 80.05 = 80 rupees and 5 paise
(b) 153 p = ₹ 1.53 = 1 rupees and 53 paise
(c) 260 p = ₹ 2.60 = 2 rupees and 60 paise
(d) 1640 p = ₹ 16.40 = 16 rupees and 40 paise
(e) 4010 p = ₹ 40.10 = 40 rupees and 10 paise
(f) 2020 p = ₹ 2020 = 20 rupees and 20 paise

Test Prep 13.4

Sol.1. (a) 49 rupees 75 paise = 4975 paise
+ 9 ruppes 65 paise = + 965 paise
= 5940 paise
= 59 rupees 40 paise

(b) 64 rupees 6 paise = 6406 paise
36 ruppes 9 paise = + 3609 paise
= 10015 paise
= 100 rupees 15 paise

Sol.2. (a)

₹	P
53	65
+ 39	78
93	43

(b)

₹	P
283	56
+ 49	84
333	40

(c)

₹	P
537	85
+ 68	29
606	14

Sol.3. (a) ₹ 63.75
₹ 75.05
+ ₹ 52.80
₹ 195.60

(b) ₹ 103.55
₹ 287.65
+ ₹ 8.05
₹ 399.25

(c) ₹ 684.55
₹ 189.65
+ ₹ 9.07
₹ 883.27

(b) ₹ 459.95
₹ 7.77
+ ₹ 66.85
₹ 532.57

Sol.4. (a) 37 rupees 40 paise = 3740 paise
29 ruppes 85 paise = – 2985 paise
= 755 paise
= 7 rupees 55 paise

(b) 200 rupees 5 paise = 20005 paise
68 ruppes 36 paise = – 6836 paise
= 13169 paise
= 131 rupees 69 paise

Sol.5. (a)

₹	P
68	75
– 29	90
38	75

(b)

₹	P
100	00
– 74	65
25	35

(c)

₹	P
315	40
– 278	68
36	72

Sol.6. (a) ₹ 218.34
– ₹ 91.76
₹ 126.58

(b) ₹ 600.20
– ₹ 183.54
₹ 416.66

(c) ₹ 309.60
– ₹ 111.08
₹ 198.52

(b) ₹ 1.05
– ₹ 0.86
₹ 0.19

Test Prep 13.5

Sol.1. Cost of pencil = ₹ 18.50
Cost of pen = + ₹ 7.75
Total cost = ₹ 26.25
Thus, Sakshi needs ₹ 26.25.

Sol.2. Cost of doll = ₹ 85.50
Cost of dream = + ₹ 117.75
Total cost = ₹ 203.25
Thus, Minu spend ₹ 203.25.

Sol.3. Cost of book = ₹ 15.88
Cost of stickers = ₹ 8.50
Cost of pencil = + ₹ 5.50
Total cost = ₹ 29.88
Thus, Tintin spend ₹ 29.88.

Sol.4. Money from mother = ₹ 101.50
Money from sister = + ₹ 98.75
Total money = ₹ 200.25
Thus, pinky gets ₹ 200.25.

Sol.5. ₹ 25.10 > ₹ 10.25
₹ 25.10
– ₹ 10.25
₹ 14.85
Thus, ₹ 25.10 is more than ₹ 10.25 by ₹ 14.85.

Sol.6. Amount in the bank = ₹ 403 . 00
Amount withdraw = – ₹ 249 . 45
Balance = ₹ 153 . 55

Sol.7. Earning = ₹ 82.00
Expenditure = – ₹ 36.50
Saving = ₹ 45.50
Thus, Rohan saved ₹ 45.50.

Sol.8. Money in the purse = ₹ 6587.35
Balance = – ₹ 2300.67
Expenses = ₹ 4277.68
Thus, Ruby spend ₹ 4277.68

Test Prep 13.6

Sol.1. (a) 16 . 30 × 2 = 32 . 60

(b) 29 . 65 × 5 = 148 . 25

(c) 408 . 75 × 6 = 2452 . 50

(d) 266 . 43 × 8 = 2131. 44

(e) 173 . 44 × 9 = 1560 . 96

(b) 200 . 40 × 10 = 000 . 00, 2004 . 00, 2004 . 00

Sol.2. Cost of 1 bat = ₹ 54.65
Cost of 8 bats = ₹ 54.65 × 8
= ₹ 437.20

54 . 65 × 7 = 619 . 50

Sol.3. Cost of 1 packet of pens = ₹ 88.50
Cost of 7 packets of pens = ₹ 88.50 × 7
= ₹ 619.50

88.50 × 7 = 619.50

Sol.4. Cost of 1 pair of shoes = ₹ 536.95
Cost of 3 pairs of shoes = ₹ 536.95 × 3
= ₹ 1610.85

536.95 × 3 = 1610.85

Sol.5. Cost of 1 box of crayons = ₹ 34.45
Cost of 10 boxes of crayons = ₹ 34.45 × 10
= ₹ 344.50

34.45 × 10 = 00.00, 344.50, 344.50

Sol.6. Cost of 8 books = ₹ 416
Cost of 1 book = ₹ 416 ÷ 8
= ₹ 52

$8\overline{)416}$ = 52, −40, 16, −16, 0

Sol.7. Cost of 6 bedsheets = ₹ 3150
Cost of 1 bedsheet = ₹ 3150 ÷ 6
= ₹ 525

$6\overline{)3150}$ = 525, −30, 15, −12, 30, −30, 0

Sol.8. Total saving in 5 months = ₹ 5275
Saving of 1 month = ₹ 5275 ÷ 5
= ₹ 1055

$5\overline{)5275}$ = 1055, −5, 29, −25, 25, −25, 0

Test Prep 13.7

Bill Date. _____ Self Service Store Bill No : ____					
S.No.	Item	Rate Per item	Quantity	Amount ₹	P
1.	Coffee	₹25.00	3	75	00
2.	Juice	₹32.50	2	65	00
3.	Idli Sambhar	₹45.50	5	227	50
			Total	267	50

Bill Date. _____ Mittal Service Store Bill No : ____					
S.No.	Item	Rate Per item	Quantity	Amount ₹	P
1.	Biscuit packet	₹15.50	5	77	50
2.	Suger bags	₹200.25	4	801	00
3.	Stamps	₹ 5.00	6	30	00
4.	Toys	₹72.80	2	145	60
5.	Lollipops	₹3.50	3	10	50
			Total	1064	60

Maths Skills

Sol.1. (a) Eleven rupees ten paise = ₹ 11.10
(b) Thirty-five rupees eight paise = ₹ 35.08
(c) Ninety-six rupees eighteen paise = ₹ 96.18
(d) Forty-nine rupees seven paise = ₹ 49.07

Sol.2. (a) 6 paise = ₹ 0.06
(b) 80 rupees 80 paise = ₹ 80.80
(c) 12 rupees = ₹ 12.00

Sol.3. (a) ₹ 66.06 = Sixty-six rupees and six paise
(b) ₹ 55.60 = Fifty-five rupees and sixty-paise
(c) ₹ 29.29 = Twenty-nine rupees and twenty-nine paise

Sol.4. (a) ₹ 90.50 = 90.50 × 100 paise = 9050 paise
(b) ₹ 5.67 = 5.67 × 100 paise = 567 paise
(c) ₹ 45.65 = 45.65 × 100 paise = 4565 paise

Sol.5. (a) 60 paise = ₹ (60 ÷ 100) = ₹ 0.60
(b) 5670 paise = ₹ (5670 ÷ 100) = ₹ 56.70
(c) 570 paise = ₹ (570 ÷ 100) = ₹5.70

Sol.6. (a) 75 rupees 90 paise = ₹ 75.90
(b) 4 rupees = ₹ 4.00
(c) 23 rupees 70 paise = ₹ 23.70
(d) 1 rupee 9 paise = ₹ 1.09
(e) 13 rupees 11 paise = ₹ 13.11
(f) 80 paise = ₹ 0.80

Sol.7. (a) ₹ 45 . 50 + ₹ 6 . 50 = ₹ 52 . 50
(b) ₹ 90 . 00 + ₹ 3 . 50 = ₹ 93 . 50
(c) ₹ 30 . 50 + ₹ 25 . 50 = ₹ 56 . 00

Sol.8. (a) ₹ 155 . 50 + ₹ 25 . 25 = ₹130 . 25
(b) ₹ 210 . 10 + ₹ 45 . 60 = ₹ 164 . 50
(c) ₹562 . 80 + ₹320 . 75 = ₹242 . 05

Sol.9. (a) ₹ 140 × 6 = ₹ 840
(b) ₹ 108.50 × 7 = ₹ 759.50
(c) ₹ 233. 30 × 8 = ₹ 1866.40

Sol.10. Cost of 10 pencils = ₹ 2.5 × 10 = ₹ 25
Cost of 10 erasers = ₹ 1.5 × 10 = ₹ 15
Cost of 6 sharpeneres = ₹ 2 × 6 = + ₹ 12
= ₹ 52
Difference : ₹ 65 − ₹ 52 = ₹ 13
Thus, ₹ 13 is left.

Sol.11. Money Ritu has = ₹ 170
Money Vani has = + ₹ 260
Money they have = ₹ 430
Difference : ₹ 500 − ₹ 430 = ₹ 70
Thus, they need ₹ 70.

Sol.12. Cost of 1 packet of eraser = ₹ 50.50
Cost of 12 packets of eraser = ₹ 50.50 × 12
= ₹ 606.00

Maths Olympiad

Sol.1. (a) ₹ 0.41

Sol.2. Difference : ₹ 750 .65 − ₹ 500.00 = ₹ 250.65
(a) ₹ 80

Sol.3. (c) ₹ 3.75

Sol.4. (c) ₹ 0.45

Sol.5. (b) ₹ 67.04

Sol.6. Cost of 5 pairs of socks = ₹ 400

Cost of 1pair of socks = ₹ 400 ÷ 5 = ₹ 80

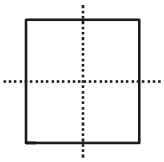
(c) ₹ 250.65

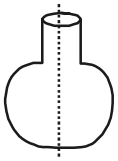
Chapter-14
Symmetry And Pattern

Test Prep. 14.1

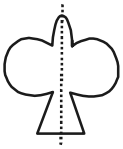
Sol.1. (a) No (b) No (c) Yes (d) No

(e) Yes (f) Yes

Sol.2. (a) 

(b) 

(c) 

(d) 

Test Prep. 14.2

Do yourself.

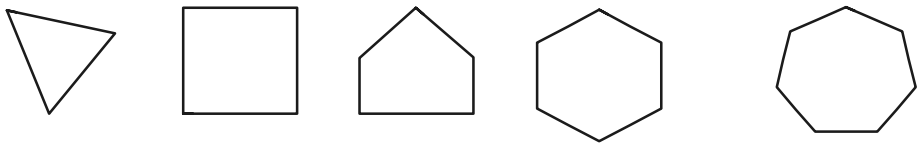
Test Prep 14.3

Sol.1. (1) 3, 6, 9, 12, 15, 18, 21.

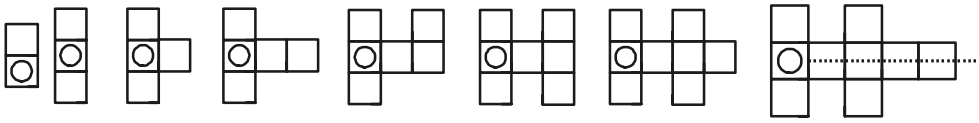
(2) 12, 14, 16, 18, 20, 22, 24.

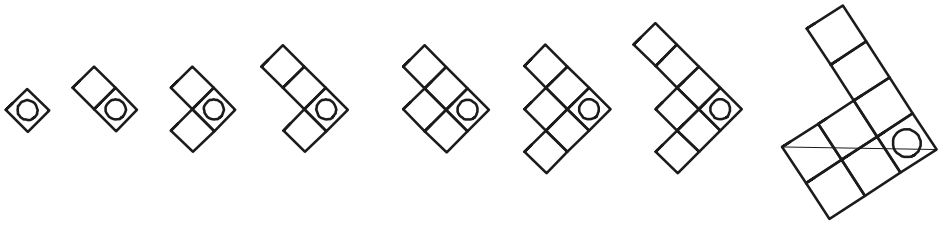
(3) 38, 47, 56, 65, 74, 83, 92.

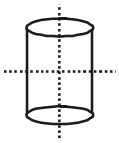
(4) 360, 350, 340, 330, 320, 310, 300.

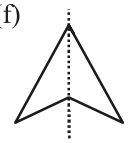
(5) 

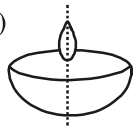
(6) 

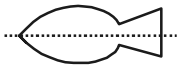
(7) 

(8) 

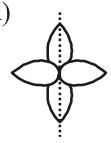
(e) 

(f) 

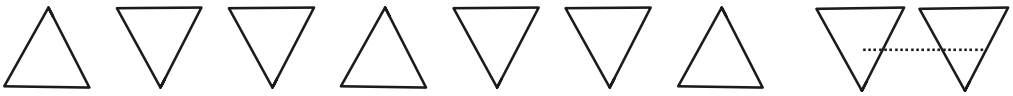
Sol.3. (a) 

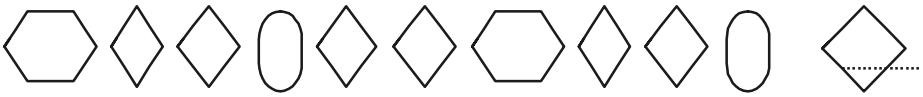
(b) 

(c) 

(d) 

(e) 

(9) 

(10) 

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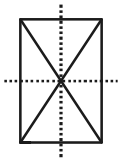
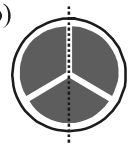
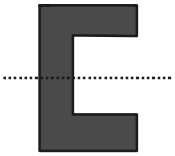
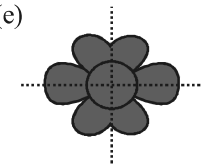
Maths Skills

Sol.1. (a) 

(b) 

(c) 

(d) 

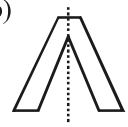
(e) 

(f) 

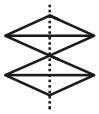
(g) 

(h) 

Sol.2. (a) 

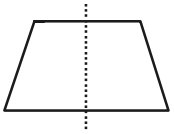
(b) 

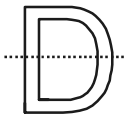
(c) 

(d) 

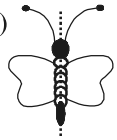
(e) 

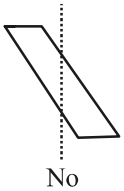
(f) 

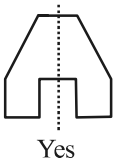
Sol.3. (a) 
Yes

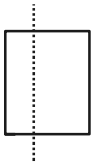
(b) 
Yes

(c) 
No

(d) 
Yes

(e) 
No

(f) 
Yes

(g) 

Test Prep 14.3

Sol.1. (1) 1, 3, 5, 7, 9, 11, 13, 15

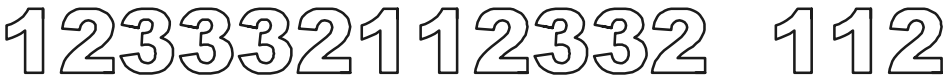
(2) 2, 4, 6, 8, 10, 12, 14, 16

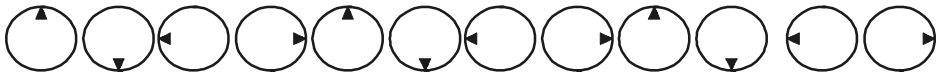
(3) 11, 22, 33, 44, 55, 66, 77

(4) 24, 34, 44, 54, 64, 74, 84

Sol.5. (a) 

(b) 

(c) 

Sol.6. (a) 

Chapter-15
Area and Perimeter

Test Prep. 15.1

Sol.1. (a) → (ii), (b) → (i), (c) → (vi), (d) → (v), (e) → (iv), (f) → (iii)

Sol.2. (a) 12 (b) 8 (c) 7 (d) 9 (e) 14 (f) 6 (g) 5 (h) 14

Test Prep 15.2

Sol. 1. (a) Given, $l = 4$ cm and b = 3 cm
Area = $l \times$ b = 4 × 3 sq.cm = 12 sq.cm

(b) Given, $l = 11$ cm and b = 4 cm
Area = $l \times$ b = 11 × 4 sq.cm = 44 sq.cm

(c) Given, $l = 12$ cm and b = 5 cm
Area = $l \times$ b = 12 × 5 sq.cm = 60 sq.cm

(d) Given, $l = 4$ cm and b = 3 cm
Area = $l \times$ b = 4 × 3 sq.cm = 12 sq.cm

(e) Given, $l = 18$ cm and b = 15 cm
Area = $l \times$ b = 18 × 15 sq.cm = 270 sq.cm

(f) Given, $l = 8$ cm and b = 8 cm
Area = $l \times$ b = 8 × 8 sq.cm = 64 sq.cm

Sol.2. **For Manav's Field**
Given, $l = 25$ m and b = 16 m
Area = $l \times$ b = 25 × 16 sq.m = 400 sq.m

For Manav's Field
Given, $l = 50$ m and b = 40 m
Area = $l \times$ b = 50 × 40 sq.m = 2000 sq.m

Since, 2000 > 400
Thus, area of Manav's field is larger.

Sol.3. (a) Given, area = 16 sq.cm and b = 2 cm
Area = $l \times$ b

$$\text{So, } l = \frac{\text{Area}}{\text{b}} = \frac{16}{2}\text{ cm} = 8\text{ cm}$$

(b) Given, area = 24 sq.cm and $l = 6$ cm
Area = $l \times$ b

$$\text{So, b} = \frac{\text{Area}}{l} = \frac{24}{6}\text{ cm} = 4\text{ cm}$$

Sol.4. Given, $l = 24$ m and b = 10 m
Area = $l \times$ b = 24 × 10 sq.m = 240 sq.m

Sol.5. Given, area = 18 sq.units and one side = 3 units
Area = one side × other side

$$\text{So, other side} = \frac{\text{Area}}{\text{one side}} = \frac{18}{3}\text{ unit}$$

$$= 6\text{ unit}$$

Test Prep 15.3

Sol.1. (a) Perimeter = 3 cm + 3 cm + 3 cm = 9cm
(b) Perimeter = 4 cm + 5 cm + 4 cm + 5 cm = 18cm
(c) Perimeter = 2 cm + 3 cm + 2 cm + 5 cm + 4 cm

= 16 cm

(d) Perimeter = 6 cm + 2 cm + 5 cm + 4 cm = 17 cm

Sol.2. Perimeter = 4m + 3m + 4m + 3m = 14m
Thus, perimeter of carpet is 14m.

Sol.3. Perimeter of the frame = 90 cm + 200 cm + 200 cm + 90 cm = 580 cm

Sol.4. Perimeter of the school = 200 m + 100 m + 140 m + 20 m + 60 m + 80 m = 600 m

Maths Olympiad

Sol.1. (d) Size

Sol.2. Area = 4 × 2 sq.units = 8 sq.units
(a)

Sol.3. Perimeter = (2 + 6 + 1 + 2 + 2 + 1 + 1 + 7) units
= 22 units
(c)

Sol.4. (a) 12 squares

Sol.5. (c) 7 squares

Sol.6. Perimeter = 3 cm + 3 cm + 3 cm = 9 cm
(c)

Chapter-16
Data Handling

Test Prep. 16.1

Sol.1.

Sajal	☺☺☺☺☺☺☺☺	𝍸 III
Anshuman	☺☺	II
Kartik	☺☺☺☺☺☺	𝍸 II
Preeti	☺☺☺☺	IIII
Sanjana	☺☺☺☺☺☺	𝍸 I

Scale : 1 ☺ = 1 toy

Sol.2.

Fanta	☺ ☺ ☺
Slice	☺ ☺ ☺ ☺ ☺
Coke	☺ ☺ ☺ ☺ ☺ ☺
Limca	☺
Sprite	☺ ☺ ☺ ☺

Scale : 1 ☺ = 5 bottes

Sol.3.

Buses	☺
Car	☺ ☺ ☺ ☺ ☺ ☺
Scooters	☺ ☺
Motorcycles	☺ ☺ ☺ ☺
Bicycles	☺ ☺ ☺

Scale : 1 ☺ = 10 vehicles

Sol.4.

Colour	Tally Marks	Number of Balloons
Red	𝍸 𝍸 𝍸 III	18
Green	𝍸 𝍸 𝍸 𝍸 I	21
Blue	𝍸 𝍸 II	12
Yellow	𝍸 𝍸 II	12
Pink	𝍸 𝍸 𝍸	15
White	𝍸 IIII	9

Test Prep 16.2

Sol.1.

Name of the group	Name of the members
Boys	4
Girls	6
Horses	6
Dogs	7
Mice	8

(a) Mice (b) Boys

Sol.2. (a) Vijay Shankar (b) Sidharth Kaul
(c) Vijay Shankar
(d) Deepak Chahar, Khaleel Ahmed, Kunal Pandya
(e) Difference = 102 – 28 = 74
(f) Runs need = 100 – 76 = 24

Sol.3. (a) Dance
(b) No. of students = 4 × 3 =12
(c) Cooking
(d) No. of students = 7 × 3 + 5 × 3 =21 + 15 = 36
(e) No. of students = 8 × 3 =24

Test Prep 16.3

Sol.1. Music

Sol.2. Dance and computer games

Sol.3. 80

Sol.4. (a) False (b) False (c) True

Examination Preperation-II

Sol.1. (i)

L	mL
6	650
+18	750
25	400

= 25 L 400 mL (a)

(ii) 4 weeks 5 days = 4 × 7 days + 5 days
= 33 days (b)

(iii) (c)

(iv) Area = length × breadth = 25 × 18 sq.cm
= 450 sq.cm (c)

Sol.2. (a) 1 century = 100 years
(b) 1 leap year = 366 days
(c) 1 year = 365 days
(d) 1 year = 12 months
(e) 1 week = 7 days

Sol.3. (a) Vertical lines = PQ and SR
(b) Horizontal lines = PS and QR
(c) No. of lines = 4

Sol.4. (a)

kg	g
8	370
+ 38	438
46	808

= 46 kg 808 g

(b)

kg	g
80	235
+ 53	533
133	768

= 133 kg 768 g

(c)

L	mL
9	432
+ 6	210
15	642

= 15 L 642 mL

(d)

L	mL
100	000
+ 65	125
165	125

= 165 L 125 mL

Sol.5. (a)

kg	g
72	064
– 38	098
33	966

= 33 kg 966 g

(b)

kg	g
38	546
– 9	075
29	471

= 29 kg 471 g

(c)

L	mL
93	150
– 69	475
23	675

= 23 L 675 mL

(d)

L	mL
41	005
– 16	089
24	916

= 24 L 916 mL

Sol.6. (a) Yes (b) No (c) No (d) No

Sol.7.
$$8\overline{)56}\ 7,\quad -56,\quad 0$$

Thus, the tailor can make 7 shirts.

Sol.8.
$$\begin{array}{r} 157 \\ \times\ 31 \\ \hline 157 \\ 4710 \\ \hline 4867 \end{array}$$

Thus, Raju delivers 4867 newspaper in 31 days.

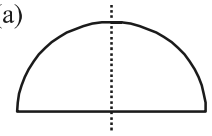
Sol.9. (a) $\frac{1}{3}$ (b) $\frac{1}{3}$

(c) $\frac{1}{3}$ (d) $\frac{2}{3}$

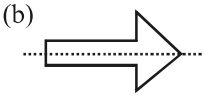
Sol.10. Fraction = $\frac{3}{5}$

Sol.11. (a) A cuboid has _____ straight edges and _____ vertices.
(b) A cylinder has _____ edges and _____ vertices.
(c) A cube has _____ straight edges and _____ vertices
(d) A sphere has _____ adge and_____ vertices.

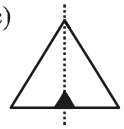
Sol.12. (a)



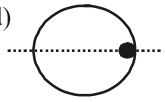
(b)



(c)



(d)



Sol.13. (a) 6
(b) Pineapple
(c) 8
(d) 5
(e) 3
(f) 27

●●

Chapter-1 Reminder of Pre-Class

Sol.1. (a) 7600 = Seven thousand six hundred
(b) 8720 = Eight thousand seven hundred twenty
(c) 6003 = Six thousand three
(d) 4863= Four thousand eight hundred sixty three
(e) 9999 = Nine thousand nine hundred ninety nine
(f) 10000 = Ten thousand
(g) 5340 = Five thousand three hundred forty
(h) 3098 = Three thousand ninety eight

Sol.2. (a) Five thousand eight hundred twenty-four = 5824
(b) Six thousand nine hundred-ninety = 6990
(c) Eight thousand seven hundred-two = 8702
(d) Nine thousand forty-eight = 9048

Sol.3. (a) 410, 420, 430, 440, 450, 460, 470, 480
(b) 512, 524, 536, 548, 560, 572, 584, 596
(c) 6000, 6500, 7000, 7500, 8000, 8500, 9000, 9500
(d) 8010, 8030, 8050, 8070, 8090, 8110, 8130, 8150

Sol.4. (a) The face value of 3 in 5384 = 3
(b) The place value of 9 in 9852 = 9000
(c) The place value of 0 is always is 0
(d) The largest four digit number is 9999.

Sol.5. (a) Place value of 5s in 5852 = 5000 and 50
Difference = 5000 – 50 = 4950

Sol.6. 8005, 8010, 8015, 8020, 8025, 8030, 8035

Sol.7. 3046

Sol.8. 9710

Sol.9. (a) 636 $\boxed{\leq}$ 702 (b) 5403 $\boxed{\geq}$ 2473
(c) 1562 $\square$ 2×1000
1562 $\boxed{\leq}$ 2000
(d) 8013 $\square$ 9013 – 1000
8013 $\boxed{=}$ 8013

Sol.10. (a) Ascending order is :
5634, 6328, 6357, 6715, 7892, 8935
(b) Ascending order is:
870, 3099, 6400, 7409, 7490, 9999

Sol.11. (a) Descending order is :
9999, 7760, 2439, 1099, 499, 92
(b) Descending order is:
9803, 9308, 8309, 8093, 8080, 3980

Sol.12. (a) 7932 = 7000 + 900 + 30 + 2
(b) 8354 = 8000 + 300 + 50 + 4
(c) 6190 = 6000 + 100 + 90
(d) 9086 = 9000 + 80 + 6

Sol.13. (a) 6000 + 300 + 40 + 1 = 6341
(b) 7000 + 50 = 7050
(c) 9000 + 900 + 3 = 9903
(d) 8000 + 400 + 20 + 5 = 8425

Sol.14.

(a)		(b)	
9467		6973	
482		748	
+ 96		+ 809	
10045		8530	

Sol.15.

(a)		(b)	
9080		9999	
– 4754		– 7899	
4326		2100	

Sol.16.

(a)			(b)		
4469			4957		9967
+ 5099			+ 5010		– 3984
9568			9967		5983
9568	– 7450	= 2118			

4469 – 5099 – 7450 = 2118
4957 – 3984 + 5010 = 5983

Sol.17.

(a)				(b)			
7	8	0	9	9	3	7	8
+ $\boxed{2}$	$\boxed{1}$	7	$\boxed{2}$		– 5	4	9
9	9	$\boxed{8}$	1	$\boxed{8}$	$\boxed{8}$	$\boxed{2}$	9

Sol.18. (a) 108 = 100 + 5 + 3 = C + V + III = CVIII
(b) 91 = 90 + 1 = (100–10)+1 = XC + I = XCI
(c) 28 = 20 + 5 + 3 = XX + V + III = XXVIII
(d) 36 = 30 + 5 + 1 = XXX + V + I = XXXVI
(e) 56 = 50 + 5 + 1 = L + V + I = LVI
(f) 73 = 50 + 20 + 3 = L + XX + III = LXXIII

Sol.19. (a) XXII = 10 + 10 + 1 + 1 = 22
(b) XL = 50 – 10 = 40
(c) C = 100
(d) XC = 100 – 10 = 90
(e) XCVI = XC + VI = (100–10) + (5 + 1)
= 90 + 6 = 96
(f) CXX = C + X + X = 100 + 10 + 10 = 120

Sol.20.

(a)		(b)	
324		214	
× 4		× 7	
1296		1498	
(c) 405		(d) 82	
× 16		× 24	
2430		328	
4050		1640	
6480		1968	

Sol.21. (a) $235 \times 0 = 0$ (b) $648 \times 1 = 648$
(c) $576 \times 10 = 5760$ (d) $3499 \times 100 = 349900$

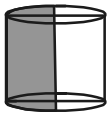
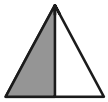
Sol.22. (a)
$$\begin{array}{r} 270 \\ 9\overline{)2434} \\ -18 \\ \hline 63 \\ -63 \\ \hline 04 \end{array}$$

(b)
$$\begin{array}{r} 808 \\ 6\overline{)4849} \\ -48 \\ \hline 049 \\ -48 \\ \hline 1 \end{array}$$

(c)
$$\begin{array}{r} 1246 \\ 8\overline{)9974} \\ -8 \\ \hline 19 \\ -16 \\ \hline 37 \\ -32 \\ \hline 54 \\ -48 \\ \hline 6 \end{array}$$

(d)
$$\begin{array}{r} 789 \\ 5\overline{)3946} \\ -35 \\ \hline 44 \\ -40 \\ \hline 46 \\ -45 \\ \hline 1 \end{array}$$

Sol.23. (a)  , (b)  ,

(c)  , (d) 

Sol.24. (a) One-fourth = $\frac{1}{4}$ (b) Four-fifths = $\frac{4}{5}$

(c) Nine-Elevenths = $\frac{9}{11}$

Sol.25. (a) $\frac{2}{3}$ = Two-thirds (b) $\frac{7}{9}$ Seven-ninths

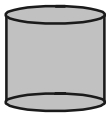
(c) $\frac{4}{7}$ Four-Sevenths (d) $\frac{9}{14}$ Nine-Fourteenths

Sol.26. (a) $\frac{3}{5} \geq \frac{2}{5}$ (b) $\frac{3}{7} = \frac{3}{7}$

(c) $\frac{5}{9} \leq \frac{8}{9}$ (d) $\frac{11}{15} \leq \frac{14}{15}$

Sol.27. A ——— B (5 cm)

M ——— N (7 cm)

Sol.28. (a)  , Cylinder (b)  , Sphere

(c)  , Cone (d)  , Cube

Sol.29. (a)  (b) 

(c)  (d) 

Sol.30. (a) 

(b) 

Sol.31. (a) All the four sides of a square are equal.
(b) A triangle has three sides and three corners.
(c) Opposite sides of a triangle are equal.
(d) A square has two diagonals.

Sol.32.

Sajal	☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺
Anshuman	☺ ☺
Kartik	☺ ☺ ☺ ☺ ☺ ☺ ☺
Preeti	☺ ☺ ☺ ☺
Sanjana	☺ ☺ ☺ ☺ ☺ ☺

Scale : 1 ☺ = 1 toy

Sol.33. (a) Their are five types of sports items in the store room.
(b) Cricket bats are maximum in members.
(c) Footballs are least in numbers.
(d)

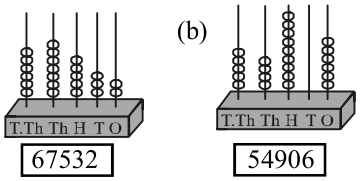
Name of sports items	Number of sports items
Table tennis rackets	6
Balls (tennis)	8
Footballs	2
Badminton rackets	4
Cricket bats	9

Chapter-2
Number System

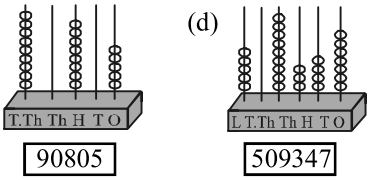
Test Prep 2.1

Sol.1. (a) 24386 (b) 60509 (c) 63140 (d) 890605
(e) 809805 (f) 573000

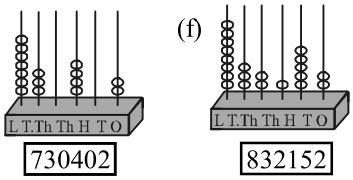
Sol.2. (a) (b)



(c) (d)



(e) (f)



Test Prep 2.2

Sol.1. (a) 5020 = 5, 020 (b) 80003 = 80, 003
(c) 200105 = 2,00,105
(d) 2003500 = 20, 03, 500
(e) 67583 = 67,583
(f) 952354 = 9,52,354
(g) 8024056 = 80,24,056
(h) 3925469 = 39,25,469

Sol.2. (a) 53,106 = Fifty three thousand one hundred six
(b) 59,019 = Fifty nine thousand nineteen
(c) 2,04,071 = Two lakh four thousand seventy one
(d) 30,33,030 = Thirty lakh thirty three thousand thirty.
(e) 56,472 = Fifty six thousand four hundred seventy two
(f) 8,41,243 = Eight lakh forty one thousand two hundred forty three
(g) 7,013,045 = Seventy lakh thirteen thousand forty five
(h) 28,14,358 = Twenty eight lakh fourteen thousand three hundred fifty eight

Sol.3. (a) Fifteen thousand six hundred eighty two = 15,682
(b) Sixty thousand fifty nine = 60,059
(c) Ninteen thousand one = 19,001
(d) Two lakh fifty six thousand two hundred fourteen = 2,56,214
(e) Forty two lakh fifty seven thousand ninety eight = 42,57,098
(f) Sixty three lakh fifty thousand hundred ninety one = 63,50,491

Sol.4. 10506, 10507, 10508, 10509, 10510, 10511, 10512, 10513, 10514

Sol.5. 60402, 60403, 60404, 60405, 60406, 60407, 60408, 60409

Test Prep 2.3

Sol.1. (a) 364619 = 364,619
(b) 1679102 = 1,679,102
(c) 5100309 = 5,100,309
(d) 12317007 = 12,317,007
(e) 509085 = 509,085
(f) 3735984 = 3,735,984
(g) 61003008 = 61, 003,008
(h) 52347008 = 52,347,008

Sol.2. (a) 3,60,520 = Three lakh sixty thousand five hundred twenty
(b) 1,400,317 = One million four hundred thousand three hundred seventeen
(c) 7,010,008 = Seven million ten thousand eight
(d)10,300,103 = Ten million three hundred thousand one hundred three
(e) 408,074 = Four hundred eight thousand seventy four
(f) 2,624,873 = Two million six hundred twenty four thousand eight hundred seventy three
(g) 52,004,009 = Fifty two million four thousand nine
(h) 63,458,004 = Sixty three million four hundred fifty eight thousand four

Sol.3. (a) Three hundred five thousand six hundred eighty two = 305,682
(b) Two million three hundred ten thousand one hundred eight = 2,310,108
(c) Ten million nine hundred nine thousand nine hundred ninety nine = 10,909,999
(d) Eighty five million three hundred two thousand thirteen = 85,302,013

Test Prep 2.4

Sol.1.

S.No.	Digit	Place	Face Value	Place Value
(a)	23076	thousands	3	3000
(b)	235961	tens	6	60
(c)	837209	lakh	8	800000
(d)	5247296	ten lakh	5	5000000
(e)	975600	lakh	9	900000

Sol.2. Place value of 8 in 4896500 = 800000
Place value of 8 in 1580776 = 80000
Difference = 800000 – 80000 = 720000

Sol.3. Place values of 5s in 235257 = 5000 and 50
Sum = 5000 + 50 = 5050

Sol.4. (a) 123527 = 100000 + 20000 + 3000 + 500 + 20 + 7
(b) 429010 = 400000 + 20000 + 9000 + 10
(c) 90494 = 90000 + 400 + 90 + 4
(d) 1607503 = 1000000 + 600000 + 7000 + 500 + 3
(e) 87928 = 80000 + 7000 + 900 + 20 + 8
(f) 8060719 = 8000000 + 600000 + 700 + 10 + 9

Sol.5. (a) 30000 + 700 + 80 + 4 = 30784
(b) 200000 + 4000 + 100 + 3 = 204103
(c) 100000 + 30000 + 2000 + 100 + 70 + 6 = 132176
(d) 500000 + 60000 + 5000 + 400 + 80 + 7 = 565487
(e) 600000 + 3000 + 8 = 603008
(f) 300000 + 6000 + 70 + 7 = 306077

Test Prep 2.5

Sol.1. (a) 92009 $\boxed{<}$ 92090

(b) 109050 $\boxed{<}$ 110005

(c) 120101 $\boxed{<}$ 12 1001

(d) 1635037 $\boxed{<}$ 1635073

(e) 976549 $\boxed{=}$ 976549

(f) 195492 $\boxed{<}$ 196432

Sol.2. (a) Ascending order is:
10039, 16940, 27960, 160940, 213500
(b) Ascending order is:
29678, 31107, 269090, 301090, 303000
(c) Ascending order is:
436042, 436210, 436212, 436505, 456212

Sol.3. (a) Descending order is:
55505, 55055, 55005, 50550, 50055
(b) Descending order is:
92100, 91080, 90560, 29500, 29190
(c) Descending order is:
793495, 789349, 783456, 709999, 658888

Sol.4. (a) 29100, (b) 35000, (c) 2867010, (d) 3560000, (e) 9999300

Sol.5. (a) 69099, (b) 119999, (c) 2860099, (d) 6631699, (e) 6809999

Test Prep 2.6

Sol.1. (a) 379 (b) 408 (c) 257

Sol.2. (a) 2038 (b) 4579 (c) 3089

Sol.3. (a) 277 (b) 7099

Sol.4. (a) 943 (b) 850

Sol.5. (a) 8651 (b) 8720

Sol.6. (a) 844 (b) 6620

Test Prep 2.7

Sol.1. (a) 394 is rounded to 390.
(b) 505 is rounded to 510.
(c) 871 is rounded to 870.
(d) 1023 is rounded to 1020.
(e) 3529 is rounded to 3530.
(f) 30608 is rounded to 30610.
(g) 53576 is rounded to 53580.
(h) 32792 is rounded to 32790.

Sol.2. (a) 817 is rounded to 800.
(b) 593 is rounded to 600.
(c) 1386 is rounded to 1400.
(d) 9802 is rounded to 9900.
(e) 7365 is rounded to 7400.
(f) 14627 is rounded to 14600.
(g) 26837 is rounded to 26800.
(h) 61545 is rounded to 61500.

Sol.3. (a) 9561 is rounded to 10000.
(b) 6831 is rounded to 7000.
(c) 5773 is rounded to 6000.
(d) 17265 is rounded to 17000.
(e) 27018 is rounded to 27000.
(f) 40963 is rounded to 41000.
(g) 41572 is rounded to 42000.
(h) 81629 is rounded to 82000.

Maths Skills

Sol.1. (a) False (b) True
(c) False (d) True

Sol.2. Place value of 1 in 9163426 = 100000
Place value of 3 in 9163426 = 3000
Difference = 100000 – 3000 = 97000

Sol.3. Place value of 5 in 9530703 = 500000
Place value of 7 in 9530703 = 700
Sum = 500000 + 700 = 500700

Sol.4. (a) 500505 $\boxed{<}$ 505005

(b) 9063719 $\boxed{>}$ 9063179

Sol.5. (a) First (b) Six
(c) First (d) Hundreds

Sol.6. Greatest 5 digit number = 99973
Smallest 5 digit number = 33379

Sol.7. Greatest number = 870

Sol.8. (a) 10000 (b) 99999

HOTS

Sol. 1. Six lakh fifty-four thousand seven hundred eight-five.
2. Yes.
3. Yes.

Maths Olympiad

Sol.1. (d) 475,206

Sol.2. (b) 806,606

Sol.3. 5 0 0 0 0 0
+ 5 0 0
5 0 0 5 0 0 (b)

Sol.4. Greatest 4-digit number = 9999
Greatest 3-digit number = –999
Difference = 9000 (c)

Sol.5. (b) 501406.

Sol.6. 1 million = 1,000,000
No. of zeroes = 6 (c)

Chapter-3
Roman Numerals

Test Prep 3.1

Sol.1. (a) 80 = 50 + 10 + 10 + 10 = L + X + X + X = LXXX
(b) 63 = 50 + 10 + 3 = L + X + III = LXIII
(c) 168 = 100 + 50 + 10 + 5 + 3 = C + L + X + V + III = CLXVIII
(d) 237 = 100 + 100 + 10 + 10 + 10 + 5 + 2 = C + C + X + X + X + V + II = CCXXXVII
(e) 400 = 500 – 100 = D – C = CD
(f) 470 = 400 + 50 + 20 = CD + L + XX = CDLXX
(g) 550 = 500 + 50 = D + L = DL
(h) 706 = 500 + 200 + 6 = D + CC + VI = DCCVI
(i) 209 = 200 + 9 = CC + IX = CCIX
(j) 408 = 400 + 8 = CD + VIII = CDVIII
(k) 599 = 500 + 90 + 9 = D + XC + IX = DXCIX
(l) 1000 = M

Sol.2. (a) LXIII = 50 + 10 + 3 = 63
(b) XCVI = XC + VI = (100 – 10) + (5 + 1) = 90 + 6 = 96
(c) CDV = CD + V = (500 – 100) + 5 = 400 + 5 = 405
(d) CXXXIX = C + XXX + IX = 100 + 30 + (10 – 1) = 130 + 9 = 139
(e) DCL = D + C + L = 500 + 100 + 50 = 600 + 50 = 650
(f) CCCLXX = CCC + L + XX = 300 + 50 + 20 = 350 + 20 = 370
(g) DCCIII = D + CC + III = 500 + 200 + 3 = 700 + 3 = 703
(h) MCII = M + C + II = 1000 + 100 + 2 = 1100 + 2 = 1102
(i) CMIX = CM + IX = (1000 – 100) + (10 – 1) = 900 + 9 = 909
(j) MCCCIV = M + CCC + IV = 1000 + 300 + 4 = 1304
(k) MDC = M + D + C = 1000 + 500 + 100 = 1500 + 100 = 1600
(l) MM = 1000 + 1000 = 2000

Sol.3. (a) X + XXX = 10 + 30 = 40
and XL = 50 – 10 = 40
Both are equal
So, X + XXX $\boxed{=}$ XL

(b) IX + XLII = 9 + 42 = 51
and L = 50
Here, 51 > 50
So, IX + XLII $\boxed{>}$ L

(c) XX + XXV = 20 + 25 = 45
and XL + V = 40 + 5 = 45
Both are equal
So, XX + XXV $\boxed{=}$ XL + V

(d) XIX + XXX = 19 + 30 = 49
and XLIX = 40 + 9 = 49
Both are equal
So, XIX + XXX $\boxed{=}$ XLIX

(e) XXIX + XX = (20 + 9) + 20 = 29 + 20 = 49
and L = 50
Here, 49 < 50
So, XXIX + XX $\boxed{<}$ L

(f) XLIII + 1 = (40 + 3) + 1 = 43 + 1 = 44
and XL = 50 – 10 = 40
Here, 44 > 40
So, XLIII + 1 $\boxed{>}$ XL

Sol.4. (a) 13 + 25 = 38 = 30 + 8 = XXX + VIII = XXXVIII
(b) 25 + 25 = 50 = L
(c) 20 + 19 = 39 = 30 + 9 = XXX + IX = XXXIX
(d) 40 + 10 = 50 = L
(e) 10 + 37 = 47 = 40 + 7 = XL + VII = XLVII
(f) 22 + 23 = 45 = 40 + 5 = XL + V = XLV

Sol.5. Ascending order is:
X, XX, XXX, XL, L, C

Sol.6. Descending order is:
XXIX, XIX, XIII, XII, XI, IX

Sol.7. (a) 12 + 12 = 24 = 20 + 4 = XX + IV = XXIV
(b) 59 – 19 = 40 = XL
(c) 8 × 4 = 32 = 30 + 2 = XXX + II = XXXII
(d) 81 ÷ 9 = 9 = IX

Sol.8. (a) V + IV = 5 + 4 = 9
(b) XXX + IV = 30 + 4 = 34
(c) X + I = 10 + 1 = 11
(d) XX + X = 20 + 10 = 30

Sol.9. (a) 9 – 5 = 4 = IV
(b) 16 – 7 = 9 = IX
(c) 28 – 14 = 14 = XIV
(d) 23 – 16 = 7 = VII

Creative Activity

Sol.1.

a → 1	b ↓ 4		c ↓ 6 →	1	
	0		6		d ↓ 1
				e → 3	1
	f → 7	7		g → 4	6
h i 8		i → 5	j ↓ 4		
2			k → 9	5	

Across →
(a) X + IV = 10 + 4 = 14
(c) LX + I = 60 + 1 = 61
(e) XX + XI = 20 + 11 = 31
(f) L + XXVII = 50 + 27 = 77
(g) XL + VI = 40 + 6 = 46
(i) L + IV = 50 + 4 = 54
(k) XC + V = 90 + 5 = 95

Down ↓
(b) L – X = 50 – 10 = 40
(c) LX + VI = 60 + 6 = 66
(d) CX + VI = 110 + 6 = 116
(h) LXXX + II = 80 + 2 = 82
(j) XL + IX = 40 + 9 = 49

Maths Skills

Sol.1. (a) Seven (b) I, X, C
(c) L, D

Sol.2. (a) 40 + 50 = 90 = XC
(b) 960 ÷ 10 = 96 = 90 + 6 = XC + VI = XCVI
(c) 8 × 8 = 64 = 60 + 4 = LX + IV = LXIV
(d) 6 × 7 = 42 = 40 + 2 = XL + II = XLII

Sol.3. (a) LXXX ÷ VIII = 80 ÷ 8 = 10 = X
(b) VI × XV = 6 × 15 = 90 = XC
(c) XXVIII + XXVII = 28 + 27 = 55 = LV

Sol.4. (a) Ascending order is :
II, IV, IX, X, XL
(b) Ascending order is:
X, XII, XX, XXX, XLV

HOTS

Que. Which of the following Roman numerals are meaningless?
(a) meaningful
(b) meaningless, since any symbol cannot be repeated more than three times.
(c) meaningless
(d) meaningful
(e) meaningful
(f) meaningless
(g) meaningless, since V cannot be repeated.
(h) meaningful

Maths Olympiad

Sol.1. (b) X
Sol.2. (c)
Sol.3. 99 = 90 + 9 = XC + IX = XCIX (c)
Sol.4. (c)
Sol.5. XIX + XXX = 19 + 30 = 49 = XLIX (a)
Sol.6. IX + XV + XX = 9 + 15 + 20 = 44 (c)

Chapter-4
Addition

Test Prep 4.1

Sol.1. (a)

	TTh	Th	H	T	O
	6	7	1	3	3
+	2	1	7	4	5
	8	8	8	7	8

(b)

	TTh	Th	H	T	O
		4	7	3	1	9
+		1	1	3	6	0
		5	8	6	7	9

(c)

	L	TTh	Th	H	T	O
	4	2	3	2	4	5
+	3	4	1	5	1	2
	7	6	4	7	5	7

(d)

	L	TTh	Th	H	T	O
	7	2	2	3	3	2
	1	4	0	0	0	2
+		2	2	2	0	1
	8	8	4	5	3	5

(e)

	L	T	Th	Th	H	T	O
	7	5		6	3	2	4
		3		1	4	4	5
+				1	2	3	0
	7	8		8	9	9	9

(f)

	L	T	Th	Th	H	T	O
	9	5		4	6	0	3
		2		5	1	7	0
+					2	2	4
	9	7		9	9	9	7

Sol.2. (a)

1	2	3	0	3	3	
	3	1	2	3	2	
		3	0	0	1	
+					1	1
1	5	7	2	7	7	

(b)

2	2	5	3	6	0	
	4	2	4	0	7	
		1	2	3	1	
+				1	0	1
2	6	9	0	9	9	

(c)

1	2	0	0	0	0	
2	1	0	4	9	0	
	1	1	0	0	0	
+			1	0	1	
3	4	1	5	9	1	

(d)

3	0	3	5	4	3	
	6	2	1	0	4	
		3	2	2	1	
			1	2	1	
+					1	0
3	6	8	9	9	9	

Sol.3. Earning in the month of January = ₹ 20242
Earning in the month of February = ₹ 22624
Earning in the month of March = + ₹ 18634
Total earning of three months = ₹ 61500

Sol.4. No. of international packages = 11015
No. of domestic packages = + 9408
Total packages = 20423

Sol.5. No. of malgova = 81243
No. of sendura = 62132
No. of neelam = + 12644
Total No. of mangoes = 156019

Sol.6. No. of females = 448796
Difference = + 67989
No. of males = 516785
No. of females = 448796
No. of males = 516785
Total population = 965581

Test Prep 4.3

Sol.1. (a) $24378 + \underline{73016} = 73016 + 24378$
(b) $52823 + 35629 = \underline{35629} + 52823$
(c) $(46381 + 801) + 71824 = \underline{46381} + (801 + 71824)$
(d) $3781 + (7602 + 83649) = (3781 + 83649) + \underline{7602}$
(e) $90705 + \underline{0} = 90705$
(f) $\underline{0} + 43652 = 43652$
(g) $32981 + \underline{0} = 32981$

Sol.2. (a)

	T.	Th	Th	H	T	O
	6	[9]		2	7	1
+	[2]	6		1	[2]	3
	9	[5]		[3]	9	[4]

(b)

	T.	Th	Th	T	O
	[5]	4	[2]	6	2
+	3	4	9	[5]	5
	8	[9]	2	1	[7]

(a)

	T.	Th	Th	H	T	O
	6	1		0	[5]	4
+	[2]	3		[9]	8	[8]
	8	[5]		0	4	2

Test Prep 4.4

Teacher and Students are advised to frame the word problems in their own words.

Test Prep 4.5

Sol.1. (a) 2160 rounded to 2200
5386 rounded to 5400
Estimated sum = 7600
2160
+ 5386
Actual sum = 7546

(b) 6130 rounded to 6100
1420 rounded to 1400
333 rounded to + 300
Estimated sum = 7800
6130
1420
+ 333
Actual sum = 7883

(c) 57195 rounded to 57200
24332 rounded to + 24300
Estimated sum = 81500
57195
+ 24332
Actual sum = 81527

(d) 20093 rounded to 20100
39685 rounded to 39700
452 rounded to + 500
Estimated sum = 60300
20093
39685
+ 452
Actual sum = 60230

Sol.2. (a) 413629 rounded to 414000
17455 rounded to 17000
28383 rounded to 28000
Estimated sum = 459000
413629
17455
+ 28383
Actual sum = 459467

(b) 56702 rounded to 57000
11473 rounded to 11000
44132 rounded to + 44000
Estimated sum = 112000

56702
11473
+ 44132
Actual sum = 112307

(c) 21387 rounded to 21000
28706 rounded to 29000
41905 rounded to + 42000
Estimated sum = 92000

21387
28706
+ 41905
Actual sum = 91998

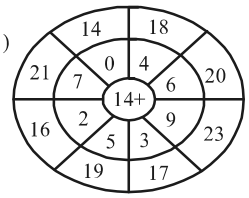
(d) 32356 rounded to 32000
45234 rounded to 45000
56237 rounded to + 56000
Estimated sum = 133000

32356
45234
+ 56237
Actual sum = 133827

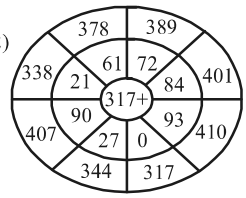
Creative Activity

Sol.1. (a) Fill all the blanks in circle:

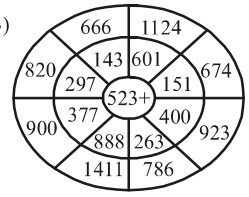
(1)



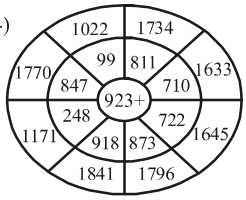
(2)



(3)



(4)



Maths Skills

Sol.1. (a) 41372 + 36521 = 77893

(b) 84361 + 17649 = 102010

(c) 34561 + 52107 = 86668

(d) 59210 + 37899 = 97109

Sol.2. (a) $\boxed{4}\boxed{3}\ 5\ 7 + 4\ 1\ \boxed{5}\ 0 = 8\ 5\ 0\ \boxed{7}$

(b) $2\ \boxed{8}\ 5\ \boxed{9} + \boxed{6}\ 3\ \boxed{8}\ 3 = 9\ 2\ 4\ 2$

(c) $\boxed{4}\ 2\ \boxed{1}\ \boxed{7}\ 7 + 3\ \boxed{4}\ 9\ 2\ \boxed{1} = 7\ 7\ 0\ 9\ 8$

Sol.3. (a) 12 + 4 = 4 + 12 = 16

(b) 4 + 9 = 9 + 4 = 13

Sol.4. (a) 14 + (8 + 1) = (14 + 8) + 1

(b) 10 + (7 + 5) = (10 + 7) + 5

Sol.5. (a) 12 + 0 = 12 (b) 0 + 8 = 8

(c) 2 + 0 = 2 (d) 0 + 3 = 3

Sol.6. Cost of vehicle = ₹ 59425
Repairing = ₹ 8652
Total cost = ₹ 68077

Sol.7. No of people who watched semifinal = 82317
Difference = + 31896
No. of people who watched final = 114213

HOTS

Sol. Total people = 11243 + 32435 = 43678

Maths Olympiad

Sol.1. (a) 5

Sol.2. (a) 8034

Sol.3. 654871
10000
664871 (b)

Sol.4. Greatest 3-digit number = 999
Smallest 6-digit number = +100000
sum = 100999 (b)

Sol.5. Rani has = ₹ 6242 + ₹ 1887
= ₹ 8129 (d)

Sol.6. No. of red clips = 8614
No. of blue clips = + 4219
Total clips = 12833 (c)

Chapter-5
Subtraction

Test Prep 5.1

Sol.1. (a)

T.Th	Th	H	T	O
7	4	9	7	3
– 1	1	4	3	0
6	3	5	4	3

(b)

T.Th	Th	H	T	O
9	2	7	7	5
– 2	1	4	5	1
7	1	3	2	4

(c)

T.Th	Th	H	T	O
5	7	7	2	6
– 1	1	6	1	3
4	6	1	1	3

(d)

L	T.Th	Th	H	T	O
9	6	7	6	5	2
– 8	5	3	2	4	1
1	1	4	4	1	1

(e) L T.Th Th H T O
6 7 6 6 5 6
– 4 4 3 4 4 4
2 3 3 2 1 2

(f) L T.Th Th H T O
7 8 9 6 5 4
– 6 7 8 3 2 3
1 1 1 3 3 1

Sol.2. (a) 62901 – 31600 = 31301

(b) 20616 – 5040 = 15576

(c) 878999 – 211888 = 667111

(d) 764532 – 453112 = 311420

(b) 675950 – 434940 = 241010

(c) 543251 – 421140 = 122111

Sol.3. (a) Minuend = 58697
Subtrahend = –37486
Difference = 21211

(b) Minuend = 467891
Subtrahend = –234561
Difference = 233330

(c) Minuend = 490626
Subtrahend = –468525
Difference = 022101

Sol.4. (a) L T.Th Th H T O
9 5 8 7 6 7
– 7 2 4 3 0 5
2 3 4 4 6 2

(b) L T.Th Th H T O
8 6 0 5 4 7
– 2 3 0 2 1 3
6 3 0 3 3 4

Sol.5. Here ₹396879 > ₹275634

₹396879
– ₹275634
121245

Thus, the cost of car is greater than the cost of motocycle by ₹1,21,245

Sol.6. Total tourists = 536438
Indian tourists = – 12320
Foreign tourists = 524118

Sol.7. Total Trees = 63543
No. of trees fall in cyclone = – 3243
Remaining trees = 60300

Test Prep 5.2

Sol.1. (a) T.Th Th H T O
9 0 7 9 5
– 7 9 8 8 6
1 0 9 0 9

(b) T.Th Th H T O
9 4 5 6 2
– 7 9 4 2 6
1 5 1 3 6

(c) T.Th Th H T O
6 7 0 3 4
– 4 9 9 7 8
1 7 0 5 6

(d) L T.Th Th H T O
6 3 8 5 1 5
– 1 2 9 6 6 9
5 0 8 8 4 6

(e) L T.Th Th H T O
5 7 9 8 7 6
– 3 1 1 1 9 6
2 6 8 6 8 0

(f) L T.Th Th H T O
8 5 7 8 2 3
– 2 9 6 9 9 6
5 6 0 8 2 7

Sol.2. (a) 43016 – 24167 = 18849

(b) 123405 – 69547 = 053858

(c) 25444 – 18888 = 06556

(d) 111111 – 98567 = 012544

Sol.3. (a) 7 thousand 4 hundred = 7400
– 5 thousand 8 hundred = – 5800
1thousand 6 hundred = 1600

Sol.4. 22222
– 9999
12223

Sol.5. (a) 5 7 4 3
– 3 5 3 7
2 2 0 6

(b) 7 8 8 1
– 6 0 5 7
1 8 2 4

(c) 3 8 8 3
– 2 3 6 4
1 5 1 9

Test Prep 5.3

Sol.1. (a) 28173 – 0 = 28173 (b) 82999 – 1 = 82998
(c) 89322 – 1 = 89321 (d) 115236 – 0 = 115236
(e) 47625 – 47625 = 0 (f) 72998 – 72998 = 0

Sol.2. (a) 18983 + 6678 = 25661 and 25661 – 9789 = 15872
So, 18983 + 6678 – 9789 = 15872

(b) 252743 + 620301 = 873044 and 873044 – 119254 = 753790
So, 252743 + 620301 – 119254 = 753790

(c) 431296 + 217175 = 648471 and 648471 – 50178 = 598293
So, 431296 + 217175 – 50178 = 598293

(d) 300192 + 432170 = 732362 and 732362 – 299429 = 432933
So, 300192 + 432170 – 299429 = 432933

(e) 84796 + 3400 = 88196 and 9540 + 2988 = 12528 and 88196 – 12528 = 75668
So, 84796 – 9540 + 3400 – 2988 = 75668

(f) 5 2 9 5 1 6 — 1 0 2 0 5 3 — 5 5 5 4 8 6

$+2\,5\,9\,7\,0$ and $+1\,8\,3\,2\,5$ $-1\,2\,0\,3\,8\,8$

$5\,5\,5\,4\,8\,6$ $1\,2\,0\,3\,7\,8$ $4\,3\,5\,1\,0\,8$

So, $529516 - 102053 + 25970 - 18325 = 435098$

Test Prep 5.4

Sol.1. No. of red clips = 18649
No. of blue clips = +42519
Total clips = 61168

Sol.2. Total bags = 86475
No. of bags sold = −52431
No. of bags sold = 34044

Sol.3. Manisha has ₹ = 12642
Difference ₹ = − 8871
Keshav has ₹ = 3771

Sol.4. No. of fish in pond = 189231
No. of fish in lake = − 172392
No. of more fish in pond = 16839

Sol.5. Here $13934 > 12506$
Govind made runs = 13934
Vikas made runs = − 12506
Difference = 1428
Thus, Govind made 1428 more runs.

Sol.6. No. of mathematics books = 14769
No. of science books = − 14575
No. of mathematics and science books = 29344
Total books = 36897
(Maths + science) books = − 29344
No. of the books = 7553

Sol.7. No. of people in city = 44652
People moved away = − 2689
People left in the city = 41963

Test Prep 5.5

Teacher and Students are advised to frame word problems in their own words.

Test Prep 5.6

Sol.1. (a) Rounding off to the nearest 100.

8159 → 8200
3438 → − 3400
Estimated difference = 4800

8159
− 3438
Actual difference = 4721

(b) 85073 → 85100
41296 → − 41300
Estimated difference = 43800

85073
− 41296
Actual difference = 43777

(c) 34931 → 34900
18179 → − 18200
Estimated difference = 16700

34931
− 18179
Actual difference = 16752

(d) 736342 → 736300
435637 → − 435600
Estimated difference = 300700

736342
− 435637
Actual difference = 300705

Sol.2. (a)

Actual difference		Estimated difference
47550	→	48000
− 26750	→	− 27000
20800		21000

(b)

Actual difference		Estimated difference
27809	→	28000
− 8196	→	− 8000
19613		20000

(c)

Actual difference		Estimated difference
56007	→	56000
− 38455	→	− 38000
17552		18000

(d)

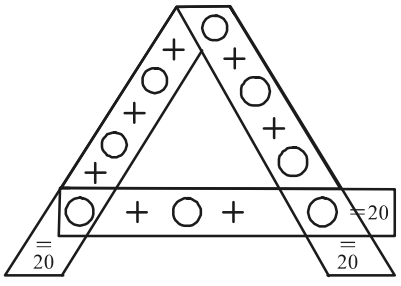
Actual difference		Estimated difference
827256	→	827000
− 152437	→	− 152000
674819		675000

Sol.3. No. of men and women = 25356 → 25400
No. of men = 14245 → − 14200
No. of women = 11200

Sol.4. Total buttons = 34364 → 34000
No. of blue buttons = 16745 → − 17000
No. of red buttons = 17000

Creative Activity

Sol.1.



Maths Skills

Sol.1. (a) 888059 − 110753 = 777306 (b) 959767 − 549423 = 410344

(c) 992113 − 206410 = 785703 (d) 665907 − 380878 = 285029

Sol.2. (a) 8 5 9 0 − 3 0 0 2 = 5 5 8 8 (b) 9 8 4 2 − 6 4 1 7 = 3 4 2 5

(c) 7 2 6 8 − 2 6 2 1 = 3 6 4 7 (d) 2 3 9 6 − 1 0 8 2 = 1 3 1 4

Sol.3. Required number = 16850 + 800 = 17650

Sol.4. Required number = 50000 − 28364
= 21636

Sol.5. Required number = 48665 − 888 = 47777

Sol.6. Money in the account = ₹ 255600
Money withdraw = − ₹ 98300
Balance in the account = ₹ 157300

Sol.7. Money given to daughter = ₹ 327500
Money given to wife = + ₹ 124625
Money given to (daughter + wife) = ₹ 452125
Total money = ₹ 705000
Money given to (daughter + wife) = − ₹ 452125
Money given to son = ₹ 252875

Sol.8. (a) Rounding to 100 : 59246 → 59200, 27305 → − 27300, = 31900
Rounding to 1000 : 59246 → 59000, 27305 → − 27000, = 32000

(b) Rounding to 100 : 62792 → 62800, 12450 → − 12500, = 50300
Rounding to 1000 : 62792 → 63000, 12450 → − 12000, = 51000

(c) Rounding to 100 : 339342 → 339300, 124570 → − 124600, = 214700
Rounding to 1000 : 339342 → 339000, 124570 → − 125000, = 214000

HOTS

Sol.1. 7 6 − 2 4 = 5 2

Sol.2. (a) Rounding to nearest 1000 :
635243 → 635000
142547 → 143000
34345 → 34000
New 635000 + 143000 = 778000 and 778000 − 34000 = 744000

(b) Rounding to nearest 1000 :
534632 → 535000
436361 → 436000
13253 → 13000
New 535000 + 13000 = 548000 and 548000 − 436000 = 112000

Maths Olympiad

Sol.1. 54691 − m = 26896
54691 − 26896 = m
54691 − 26896 = 27795
So, m = 27795 (d)

Sol.2. 93468 − 12875 = 80593 (b)

Sol.3. 91483 + 2639 = 94122 and 1968 + 6596 = 8564
So, 91483 + 2639 − 1968 − 6596 = 85558 (d)

Sol.4. Four hundred + fourteen tens
= 400 + 14 × 10 = 400 + 140 = 540 (d)

Sol.5. 34867 − 29978 = 4889 (d)

Sol.6. Rounding off to 1000 :
634970 → 635000
39720 → − 40000
Estimated difference = 595000 (b)

Chapter-6
Multiplication

Test Prep 6.1

Sol.1. (a) 152 × 1 = 152 (b) 163 × 1 = 163
(c) 375 × 1 = 375 (d) 3240 × 0 = 3240
(e) 536 × 0 = 0 (f) 843 × 0 = 0

Sol.2. (a) 38 × 165 = 165 × 38
(b) 432 × 247 = 247 × 432
(c) 1209 × 540 = 540 × 1209
(d) 169 × 215 = 215 × 169

Sol.3. (a) 13 × (16 × 19) = (13 × 16) × 19
(b) (84 × 73) × 91 = 84 × (73 × 91)
(c) 42 × (82 × 67) = 42 × (67 × 82)
(d) 62 × (93 × 59) × (62 × 93) × 59

Sol.4. (a) $27 \times (9 + 15) = (27 \times 9) + (27 \times \underline{15})$

(b) $106 \times (80 + 58) = (106 \times \underline{80}) + (106 \times 58)$

Sol.5. (a) $345 \times 10 = \underline{3450}$ (b) $2037 \times 10 = \underline{20370}$

(c) $3952 \times 10 = \underline{39520}$ (d) $98 \times 100 = \underline{9800}$

(e) $573 \times 100 = \underline{57300}$ (f) $2198 \times 100 = \underline{219800}$

(g) $64 \times 1000 = \underline{64000}$ (h) $328 \times 1000 = \underline{328000}$

(i) $9083 \times 1000 = \underline{9083000}$

Sol.6. (a) $256 \times 60 = 256 \times 6 \times 10$

$= (256 \times 6) \times 10$

$= 1536 \times 10 = 15360$

(b) $295 \times 80 = 295 \times 8 \times 10$

$= (295 \times 8) \times 10$

$= 2360 \times 10 = 23600$

(c) $347 \times 90 = 347 \times 9 \times 10$

$= 3123 \times 10 = 31230$

(d) $381 \times 200 = (381 \times 2) \times 100$

$= 762 \times 100 = 76200$

(e) $517 \times 400 = (517 \times 4) \times 100$

$= 2068 \times 100 = 206800$

(f) $673 \times 700 = (673 \times 7) \times 100$

$= 4711 \times 100 = 471100$

(g) $438 \times 3000 = (438 \times 3) \times 1000$

$= 1314 \times 1000 = 1314000$

(h) $692 \times 600 = (692 \times 6) \times 1000$

$= 4152 \times 1000 = 4152000$

(i) $165 \times 8000 = (165 \times 8) \times 1000$

$= 1320 \times 1000 = 132000$

Sol.7. (a) $2 \times 63 \times 5 = 63 \times (2 \times 5) = 63 \times 10 = 630$

(b) $5 \times 97 \times 20 = 97 \times (20 \times 5) = 97 \times 100 = 9700$

(c) $4 \times 86 \times 25 = 86 \times (25 \times 4) = 86 \times 100 = 8600$

(d) $2 \times 73 \times 50 = 73 \times (50 \times 2) = 73 \times 100 = 7300$

(e) $37 \times 4 \times 125 = 37 \times (125 \times 4) = 37 \times 500$

$= (37 \times 5) \times 100 = 185 \times 100$

$= 18500$

(f) $4 \times 421 \times 250 = 421 \times (4 \times 250)$

$= 421 \times 1000 = 421000$

Test Prep 6.2

Sol.1. (a)

$$\begin{array}{r} 327 \\ \times\ 58 \\ \hline 2616 \\ 16350 \\ \hline 18966 \end{array}$$

(b)

$$\begin{array}{r} 478 \\ \times\ 264 \\ \hline 1912 \\ 28680 \\ 95600 \\ \hline 126192 \end{array}$$

(c)

$$\begin{array}{r} 9684 \\ \times\ 97 \\ \hline 67788 \\ 871560 \\ \hline 939348 \end{array}$$

(d)

$$\begin{array}{r} 1786 \\ \times\ 420 \\ \hline 00000 \\ 35720 \\ 714400 \\ \hline 750120 \end{array}$$

Sol.2. (a)

$$\begin{array}{r} 496 \\ \times\ 75 \\ \hline 2480 \\ 34720 \\ \hline 37200 \end{array}$$

(b)

$$\begin{array}{r} 357 \\ \times\ 48 \\ \hline 2856 \\ 14280 \\ \hline 17136 \end{array}$$

(c)

$$\begin{array}{r} 329 \\ \times\ 148 \\ \hline 2632 \\ 13160 \\ 32900 \\ \hline 48692 \end{array}$$

(d)

$$\begin{array}{r} 746 \\ \times\ 253 \\ \hline 2238 \\ 37300 \\ 149200 \\ \hline 188738 \end{array}$$

(e)

$$\begin{array}{r} 8624 \\ \times\ 18 \\ \hline 68992 \\ 86240 \\ \hline 155232 \end{array}$$

(f)

$$\begin{array}{r} 2408 \\ \times\ 124 \\ \hline 9632 \\ 48160 \\ 240800 \\ \hline 298592 \end{array}$$

Sol.3. (a)

$$\begin{array}{r} 648 \\ \times\ 27 \\ \hline 4536 \\ 12960 \\ \hline 17496 \end{array}$$

(b)

$$\begin{array}{r} 162 \\ \times\ 75 \\ \hline 810 \\ 11340 \\ \hline 12150 \end{array}$$

(c)

$$\begin{array}{r} 2936 \\ \times\ 98 \\ \hline 23488 \\ 264240 \\ \hline 287728 \end{array}$$

(d)

$$\begin{array}{r} 3134 \\ \times\ 276 \\ \hline 18804 \\ 219380 \\ 626800 \\ \hline 864984 \end{array}$$

(e)

$$\begin{array}{r} 892 \\ \times\ 378 \\ \hline 7136 \\ 62440 \\ 267600 \\ \hline 337176 \end{array}$$

(f)

$$\begin{array}{r} 713 \\ \times\ 965 \\ \hline 3565 \\ 42780 \\ 641700 \\ \hline 688045 \end{array}$$

(g)

$$\begin{array}{r} 654 \\ \times\ 827 \\ \hline 4578 \\ 13080 \\ 523200 \\ \hline 540858 \end{array}$$

(e)

$$\begin{array}{r} 2879 \\ \times\ 306 \\ \hline 17274 \\ 00000 \\ 863700 \\ \hline 880974 \end{array}$$

(f)

$$\begin{array}{r} 1914 \\ \times\ 703 \\ \hline 5742 \\ 00000 \\ 1339800 \\ \hline 1345542 \end{array}$$

Test Prep 6.3

Sol.1. No. of pearls in 1 necklace = 52

No. of pearls in 7 necklaces $= 52 \times 7$

$= 364$

$$\begin{array}{r} 52 \\ \times\ 7 \\ \hline 364 \end{array}$$

Sol.2. Roses in 1 garland = 72

Roses in 9 garlands $= 72 \times 9$

$= 648$

$$\begin{array}{r} 72 \\ \times\ 9 \\ \hline 648 \end{array}$$

Sol.3. 1 year = 365 days

3 years $= 365 \times 3$ days

$= 1095$ days

$$\begin{array}{r} 365 \\ \times\ 3 \\ \hline 1095 \end{array}$$

Saving of 1 day = ₹ 87
Saving of 1095 days = ₹ 87 × 1095
= ₹ 95265

```
   87
× 1095
  435
 7830
 0000
87000
95265
```

Sol.4. Weight of 1 packet = 485 grams
Weight of 54 packets = 485 × 54 grams
= 26190 grams

```
  485
×  54
 1940
24250
26190
```

Sol.5. Cost of 1 printer = ₹ 1685
Cost of 32 printers = ₹ 1685 × 32
= ₹ 53920

```
 1685
×  32
 3370
50550
53920
```

Sol.6. Marbles in bag = 367
Marbles in 258 bags = 367 × 258
= 94686

```
  367
× 258
 2936
18350
73400
94686
```

Sol.7. Toffees in a packet = 876
Toffees in 564 packets = 876 × 564
= 494064

```
  876
× 564
 3504
52560
438000
494064
```

Sol.8. Distance travelled in 1 hour = 182 km
Distance travelled in 235 hours = 182 × 235 km
= 42770 km

```
  182
× 235
  910
 5460
36400
42770
```

Test Prep 6.4

Sol.1. Estimate the product:

1. Round off 57 to nearest 10 = 60
   Round off 88 to nearest 10 = 90
   Estimated product = 60 × 90 = 5400
2. Round off 84 to nearest 10 = 80
   Round off 93 to nearest 10 = 90
   Estimated product = 80 × 90 = 7200
3. Round off 75 to nearest 10 = 80
   Round off 64 to nearest 10 = 60
   Estimated product = 80 × 60 = 4800
4. Round off 114 to nearest 100 = 100
   Round off 77 to nearest 10 = 80
   Estimated product = 100 × 80 = 8000
5. Round off 218 to nearest 100 = 200
   Round off 52 to nearest 10 = 50
   Estimated product = 200 × 50 = 1000
6. Round off 573 to nearest 100 = 600
   Round off 89 to nearest 10 = 90
   Estimated product = 600 × 90 = 5400
7. Round off 123 to 100 = 100
   Round off 234 to 100 = 200
   Estimated product = 100 × 200 = 20000
8. Round off 483 to 100 = 500
   Round off 597 to 100 = 600
   Estimated product = 500 × 600 = 300000
9. Round off 792 to 100 = 800
   Round off 613 to 100 = 600
   Estimated product = 800 × 600 = 48000

Maths Skills

Sol.1. Multiply:

(a) 16 × 2000 = (16 × 2) × 1000 = 32 × 1000 = 32000
(b) 47 × 3000 = (47 × 3) × 1000 = 141 × 1000 = 141000
(c) 93 × 4000 = (93 × 4) × 1000 = 372 × 1000 = 372000
(d) 117 × 5000 = (117 × 5) × 1000 = 585 × 1000 = 585000

(e) $256 \times 6000 = (256 \times 6) \times 1000 = 1536 \times 1000$
$= 1536000$

(f) $472 \times 9000 = (472 \times 9) \times 1000 = 4248 \times 1000$
$= 424800$

Sol.2. (a)
$$\begin{array}{r} 108 \\ \times\ 68 \\ \hline 864 \\ 6480 \\ \hline 7344 \end{array}$$

(b)
$$\begin{array}{r} 907 \\ \times\ 19 \\ \hline 8163 \\ 9070 \\ \hline 17233 \end{array}$$

(c)
$$\begin{array}{r} 650 \\ \times\ 66 \\ \hline 3900 \\ 39000 \\ \hline 42900 \end{array}$$

(d)
$$\begin{array}{r} 3729 \\ \times\ 97 \\ \hline 26103 \\ 335610 \\ \hline 361713 \end{array}$$

(b)
$$\begin{array}{r} 6347 \\ \times\ 638 \\ \hline 50776 \\ 190410 \\ 3808200 \\ \hline 4049386 \end{array}$$

(c)
$$\begin{array}{r} 6683 \\ \times\ 852 \\ \hline 13366 \\ 334150 \\ 5346400 \\ \hline 5693916 \end{array}$$

(g)
$$\begin{array}{r} 3328 \\ \times\ 887 \\ \hline 23296 \\ 266240 \\ 2662400 \\ \hline 2951936 \end{array}$$

(h)
$$\begin{array}{r} 2195 \\ \times\ 379 \\ \hline 19755 \\ 153650 \\ 658500 \\ \hline 813905 \end{array}$$

(i)
$$\begin{array}{r} 8167 \\ \times\ 294 \\ \hline 32668 \\ 735030 \\ 1633400 \\ \hline 2401098 \end{array}$$

Sol.3. (a) $67 \rightarrow 70$ and $53 \rightarrow 50$
Product $= 70 \times 50 = 3500$

(b) $324 \rightarrow 300$ and $81 \rightarrow 80$
Product $= 300 \times 80 = 24000$

(c) $4325 \rightarrow 4000$ and $124 \rightarrow 100$
Product $= 4000 \times 100 = 400000$

Sol.4. Sugarcane bundles in 1 cart $= 485$
Sugarcane bundles in 7 carts $= 485 \times 7$
$= 3395$

Sol.5. Cost of 1 iron box $= ₹\ 565$
Cost of 8 iron boxes $= ₹\ 565 \times 8 = ₹\ 4520$

Sol.6. Paper in 1 quire $= 24$ sheets
Papers in 36 quires $= 24 \times 36$ sheets
$= 864$ sheets

Sol.7. No. of days in July $= 31$
No. of hours in 1 day $= 24$ hours
No. of hours in 31 days $= 24 \times 31$ hours
$= 744$ hours

Sol.8. Cost of 1 bicycle $= ₹\ 3665$
Cost of 285 bicycle $= ₹\ 3665 \times 285$
$= ₹\ 10,44,525$

HOTS

Sol.1. (a) $143 \times 30 = (143 \times 3) \times 10 = 429 \times 10 = 4290$

(b) $143 \times 300 = (143 \times 3) \times 100 = 429 \times 100$
$= 42900$

(c) $143 \times 3000 = (143 \times 3) \times 1000 = 429 \times 1000$
$= 429000$

Sol.2. (a) $4775 \times 25 = (4776 - 1) \times 25 = 4776 \times 25 - 25$
$= 119400 - 25 = 119375$

(b) $4777 \times 25 = (4776 + 1) \times 25 = 4776 \times 25 + 25$
$= 119400 + 25 = 119425$

Sol.3. (a) $150 \times 74 = 150 \times (75 - 1) = 150 \times 75 - 150$
$= 11250 - 150 = 11100$

(b) $150 \times 76 = 150 \times (75 + 1) = 150 \times 75 + 150$
$= 11250 + 150 = 11400$

Maths Olympiad

Sol.1. (c) Product

Sol.2. $636 \times 100 = 636 \times 2 \times 50$ (c)

Sol.3. (d) 150×20

Sol.4. Product $= 3 \times 5 \times 7 \times 9 = 15 \times 7 \times 9$
$= 105 \times 9$

Sol.5. (b) 300×50

Sol.6. 1 week $= 7 \times 24$ hours $= 168$ hours
1 hour $= 3600$ seconds
168 hours $= 168 \times 3600$ seconds $= 604800$ (c)

Chapter-7
Division

Test Prep 7.1

Sol.1. (a) $2345 \div 1 = \underline{2345}$ (b) $0 \div 576 = \underline{0}$
(c) $4326 \div 4326 = \underline{1}$ (b) $7832 \div \underline{7832} = 1$
(e) $0 \div 5947 = \underline{0}$ (f) $\underline{0} \div 2445 = 0$
(g) If the quotient is 1, the division is equal to the dividend.
(h) The remainder is always smaller than the divisor.
(i) If the dividend is zero, the quotient is also zero.

Sol.2. (a)
$$\begin{array}{r} 2156 \\ 4\overline{)8624} \\ -\ 8 \\ \hline 6 \\ -\ 4 \\ \hline 22 \\ -\ 20 \\ \hline 24 \\ -\ 24 \\ \hline 0 \end{array}$$

Quotient $= 2156$
Remainder $= 0$

Check :

Divisor × Quotient + Remainder

= 4 × 2156 + 0

= 8624 + 0

= 8624 = Dividend

Thus, the answer is correct.

(b)
$$\begin{array}{r} 459 \\ 3\overline{)1377} \\ -12 \\ \hline 017 \\ -15 \\ \hline 27 \\ -27 \\ \hline 0 \end{array}$$

Check :

3 × 459 + 0

= 1377 + 0 = 1377

(c)
$$\begin{array}{r} 209 \\ 6\overline{)1255} \\ -12 \\ \hline 055 \\ -54 \\ \hline 1 \end{array}$$

Check :

6 × 209 + 1

= 1254 + 1

= 1255

(d)
$$\begin{array}{r} 2004 \\ 3\overline{)6012} \\ -6 \\ \hline 012 \\ -12 \\ \hline 0 \end{array}$$

Check :

3 × 2004 + 0

= 6012 + 0

= 6012

(e)
$$\begin{array}{r} 1862 \\ 5\overline{)9314} \\ -5 \\ \hline 43 \\ -40 \\ \hline 31 \\ -30 \\ \hline 14 \\ -10 \\ \hline 4 \end{array}$$

Check :

5 × 1862 + 4

= 9310 + 4 = 9314

(f)
$$\begin{array}{r} 782 \\ 2\overline{)1565} \\ -14 \\ \hline 016 \\ -16 \\ \hline 05 \\ -4 \\ \hline 1 \end{array}$$

Check :

2 × 782 + 1

= 1564 + 1 = 1565

Test Prep 7.2

Sol.1. (a)
$$\begin{array}{r} 321 \\ 16\overline{)5140} \\ -48 \\ \hline 34 \\ -32 \\ \hline 20 \\ -16 \\ \hline 4 \end{array}$$

Quotient = 321

Remainder = 4

(b)
$$\begin{array}{r} 500 \\ 14\overline{)7008} \\ -70 \\ \hline 08 \end{array}$$

Quotient = 500

Remainder = 8

(c)
$$\begin{array}{r} 500 \\ 16\overline{)8014} \\ -80 \\ \hline 014 \end{array}$$

Quotient = 500

Remainder = 14

(d)
$$\begin{array}{r} 145 \\ 15\overline{)2175} \\ -15 \\ \hline 67 \\ -60 \\ \hline 75 \\ -75 \\ \hline 0 \end{array}$$

Quotient = 145

Remainder = 0

(e)
$$\begin{array}{r} 326 \\ 13\overline{)4244} \\ -39 \\ \hline 34 \\ -78 \\ \hline 84 \\ -78 \\ \hline 6 \end{array}$$

Quotient = 326

Remainder = 6

(f)
$$\begin{array}{r} 415 \\ 19\overline{)7891} \\ -76 \\ \hline 29 \\ -19 \\ \hline 101 \\ -95 \\ \hline 6 \end{array}$$

Quotient = 415

Remainder = 6

Sol.2. (a)
$$\begin{array}{r} 3567 \\ 15\overline{)53505} \\ -45 \\ \hline 85 \\ -75 \\ \hline 100 \\ -90 \\ \hline 105 \\ -105 \\ \hline 0 \end{array}$$

Quotient = 3567

Remainder = 0

(b)
$$\begin{array}{r} 4457 \\ 14\overline{)62407} \\ -56 \\ \hline 64 \\ -56 \\ \hline 80 \\ -70 \\ \hline 107 \\ -98 \\ \hline 9 \end{array}$$

Quotient = 4457

Remainder = 9

```
       5150
(c) 16)82410
      -80
       24
      -16
        81
       -80
        10
        00
        10
```
Quotient = 5150
Remainder = 10

```
       8454
(d) 11)92994
      -88
       49
      -44
        59
       -55
         44
       - 44
          0
```
Quotient = 8454
Remainder = 0

```
        529
(e) 19)10052
       -95
        55
       -38
        172
       -171
          1
```
Quotient = 529
Remainder = 1

```
       2066
(f) 25)51673
      -50
        167
       -150
        173
       -150
         23
```
Quotient = 2066
Remainder = 23

Sol.3.

```
       1116
(a) 56)62504
      -56
        65
       -56
        90
       -56
        344
       -336
          8
```
Quotient = 1116
Remainder = 8

```
        755
(b) 92)69544
      -644
        514
       -460
        544
       -460
         84
```
Quotient = 755
Remainder = 84

```
        683
(c) 83)56703
      - 498
        690
      - 664
        263
      - 249
         14
```
Quotient = 683
Remainder = 14

```
        2004
(d) 99)198404
      -198
        0404
        -396
           8
```
Quotient = 2004
Remainder = 8

```
       10383
(e) 65)674952
      -65
        249
       -195
         545
        -520
         252
        -195
          57
```
Quotient = 10383
Remainder = 57

```
       13110
(f) 38)498208
      -38
       118
      -114
         42
        -38
         40
        -38
          2
```
Quotient = 13110
Remainder = 28

Sol.4. (a) 1625 ÷ 10
Quotient = 162
Remainder = 5

(b) 1008 ÷ 10
Quotient = 100
Remainder = 8

(c) 4141 ÷ 10
Quotient = 414
Remainder = 1

(d) 1736 ÷ 100
Quotient = 17
Remainder = 36

(e) 25004 ÷ 100
Quotient = 250
Remainder = 4

(f) 80542 ÷ 100
Quotient = 805
Remainder = 42

(g) 6952 ÷ 1000
Quotient = 6
Remainder = 952

(h) 370082 ÷ 1000
Quotient = 370
Remainder = 82

(i) 854019 ÷ 1000
Quotient = 854
Remainder = 19

Sol.5.

```
        902
(a) 60)54164
      -540
         164
        -120
          44
```
Quotient = 902
Remainder = 44

```
        222
(b) 83)18469
      -166
        186
       -166
        200
       -166
         43
```
Now, the divisor
= 222

(c) Dividend = Quotient × Divisor + Remainder
$= 976 \times 62 + 12$
$= 60512 + 12$
$= 60524$

```
   976
  × 62
  1952
 58560
 60512
```

(d) Dividend = Quotient × Divisor + Remainder

$= 263 \times 57 + 43$

$= 14991 + 43$

$= 15034$

$$\begin{array}{r} 263 \\ \times 57 \\ \hline 1841 \\ 13150 \\ \hline 14991 \end{array}$$

Test Prep 7.3

Teacher and students are advised that they should frame a word problem in their own words.

Test Prep 7.4

Sol.1. (a) 312 is rounded off to 300.
31 is rounded off to 30.
So, $300 \div 30 = 10$

(b) 597 is rounded off to 600.
23 is rounded off to 20.
So, $600 \div 20 = 30$

(c) 567 is rounded off to 600.
58 is rounded off to 60.
So, $600 \div 60 = 10$

(d) 852 is rounded off to 900.
88 is rounded off to 90.
So, $900 \div 90 = 10$

(e) 829 is rounded off to 800.
42 is rounded off to 40.
So, $800 \div 40 = 20$

(f) 719 is rounded off to 700.
71 is rounded off to 70.
So, $700 \div 70 = 10$

(g) 642 is rounded off to 600.
63 is rounded off to 60.
So, $600 \div 60 = 10$

(h) 2798 is rounded off to 2800.
54 is rounded off to 50.
So, $2800 \div 50 = 56$

(i) 3245 is rounded off to 3000.
279 is rounded off to 300.
So, $3000 \div 300 = 10$

Test Prep 7.5

Sol.1. No. of rows required = $873 \div 9 = 97$

$$\begin{array}{r} 97 \\ 9\overline{)873} \\ -81 \\ \hline 63 \\ -63 \\ \hline 0 \end{array}$$

Sol.2. No. of rooms required = $216 \div 4 = 54$

$$\begin{array}{r} 54 \\ 4\overline{)216} \\ -20 \\ \hline 16 \\ -16 \\ \hline 0 \end{array}$$

Sol.3. No. of students on a bench = 6
No. of benches required for 6264 students
$= 6264 \div 6 = 1044$

$$\begin{array}{r} 1044 \\ 6\overline{)6264} \\ -6 \\ \hline 26 \\ -24 \\ \hline 24 \\ -24 \\ \hline 0 \end{array}$$

Sol.4. No. of rooms in each floor = $2292 \div 6 = 382$

$$\begin{array}{r} 382 \\ 6\overline{)2292} \\ -18 \\ \hline 49 \\ -48 \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

Sol.5. Distance covered in 48 hours = 7488 km
Distance covered in 1 hour = $(7488 \div 48)$ km
= 156 km

$$\begin{array}{r} 156 \\ 48\overline{)7488} \\ -48 \\ \hline 268 \\ -240 \\ \hline 288 \\ -288 \\ \hline 0 \end{array}$$

Sol.6. Distance covered in 57 hours = 1482 km
Distance covered in 1 hour = $(1482 \div 57)$ km
= 26 km

$$\begin{array}{r} 26 \\ 57\overline{)1482} \\ -114 \\ \hline 342 \\ -342 \\ \hline 0 \end{array}$$

Sol.7. Amount collected by 37 boys = ₹ 16946
Amount collected by 1 boy = ₹ 16946 ÷ 37
= ₹ 458

```
      458
37 ) 16946
    –148
     214
    –185
      296
     –296
       0
```

Sol.8. No. of rows required = 25098 ÷ 94
= 267

```
      267
94 ) 25098
    –188
     629
    –564
      658
     –658
       0
```

Test Prep 7.6

Sol.1. Cost of 16 metres of cloth = ₹ 2000
Cost of 1 metres of cloth = ₹ 2000 ÷ 16
= ₹ 125

Sol.2. Cost of 8 dolls = ₹ 640
Cost of 1 doll = ₹ 640 ÷ 8
= ₹ 80

Sol.3. Cost of 9 cycles = ₹ 2925
Cost of 1 cycle = ₹ 2925 ÷ 9 = ₹ 325
Cost of 4 cycles = ₹ 325 × 4 = ₹ 1300

Sol.4. On 15 litres car travels = 225 km
On 1 litre car travels = (225 ÷ 15) km = 15 km
On 10 litres car travels = 15 × 10 km = 150 km

Sol.5. 20 trucks carry = 5000 bags
1 truck carries = (5000 ÷ 20) bags = 250 bags
5 trucks carry = 250 × 5 bags = 1250 bags

Maths Skills

Sol.1. (a)

```
      26
29 ) 754
   – 58
    174
   –174
      0
```

So, 754 ÷ 26 = 29

(b)

```
      14
30 ) 420
   – 30
    120
   –120
      0
```

So, 420 ÷ 14 = 30

(c)

```
   28
 × 39
 252
840
1092
```

So, 1092 ÷ 28 = 39

(d)

```
      27
33 ) 891
   – 66
    231
   –231
      0
```

So, 891 ÷ 27 = 33

(e)

```
   39
 × 14
 156
390
546
```

So, 546 ÷ 39 = 14

(f)

```
   26
 × 15
 130
260
390
```

So, 390 ÷ 15 = 26

Sol.2. (a) 0 ÷ 88495 = 0 (b) 48828 ÷ 48828 = 1
(c) 84324 ÷ 1 = 84324 (d) 0 ÷ 88994 = 0
(e) 41188 ÷ 1 = 41188 (f) 28649 ÷ 28649 = 1

Sol.3. No. of lines in 6 notebooks = 9120
No. of lines in 1 notebook = 9120 ÷ 6 = 1520

Sol.4. 98 bags of rice in a tampo.
3038 bags of rice in (3038 ÷ 98) tempos = 31

Sol.5. No. of notes = 9040 ÷ 20 = 452

Sol.6. 79 bags of pulses in a wagon.
9875 bags of pulses in (9875 ÷ 79) wagon = 125

Sol.7. (a)

```
      8
33 ) 274
   – 264
     10
```

(b)

```
      96
47 ) 4531
   – 423
    301
   –282
     19
```

(c)

```
      31
281 ) 8873
   – 843
    443
   –281
    162
```

HOTS

Sol.1. No. greater than 48 and less 60 are 49, 50, 51,52, 53, 54, 55, 56, 57, 58, 59. But 54 is completely divisible by 6.
Thus, the required number = 54

Sol.2. No. greater than 56 and less than 66 are 57, 58, 59, 60, 61, 62, 63, 64, 65. But 63 is the only number when divided by 7 gives 2 as remainder.

Maths Olympiad

Sol.1. (a)
$$\begin{array}{r} 1031 \\ 11\overline{)11341} \\ -11 \\ \hline 034 \\ -33 \\ \hline 11 \\ -11 \\ \hline 0 \end{array}$$
$\therefore$ (b)

Sol.2. $10 \times 100 \times \underline{100} = 100000$ $\therefore$ (b)

Sol.3.
$$\begin{array}{r} 85 \\ 7\overline{)600} \\ -56 \\ \hline 40 \\ -35 \\ \hline 5 \end{array}$$
Remainder = 5 (c)

Sol.4.
$$\begin{array}{r} 333 \\ 15\overline{)4995} \\ -45 \\ \hline 49 \\ -45 \\ \hline 45 \\ -45 \\ \hline 0 \end{array}$$
No. of 3s in 333 = 3 (c)

Sol.5. Largest 4-digit number = 9999
Largest 2-digit number = 99

Sol.5.
$$\begin{array}{r} 101 \\ 99\overline{)9999} \\ -99 \\ \hline 099 \\ -99 \\ \hline 0 \end{array}$$
$\therefore$ Quotient = 101 (d)

Sol.6. Cost of 18 tickets = ₹ 86886
Cost of 1 ticket = ₹ 86886 ÷ 18 = ₹ 4827
$\therefore$ (a)

Chapter-8
Vedic Ganit

Test Prep 8.1

Sol.1. Write the Ekhadhikena purvena of the following numbers:

Numbers	Ekadhikena purvena	New number
(a) 6 in number 36	$\dot{3}6$	46
(b) 5 in number 345	$3\dot{4}5$	355
(c) 8 in number 82	$\dot{0}82$	182
(d) 4 in number 548	$\dot{5}48$	648
(e) 2 in number 256	$\dot{0}256$	1256
(f) 3 in number 43	$\dot{4}3$	53
(g) 7 in number 671	$\dot{6}71$	771
(h) 0 in number 2604	$2\dot{6}04$	2704
(i) 2 in number 6235	$\dot{6}235$	7235
(j) 9 in number 0495	$0\dot{4}95$	595

Sol.2.
(a) $\begin{array}{r} 54 \\ +29 \\ \hline 83 \end{array}$ (b) $\begin{array}{r} 72 \\ +69 \\ \hline 141 \end{array}$ (c) $\begin{array}{r} 894 \\ +723 \\ \hline 1617 \end{array}$ (d) $\begin{array}{r} 290 \\ +158 \\ \hline 448 \end{array}$

(e) $\begin{array}{r} 4026 \\ +3414 \\ \hline 7440 \end{array}$ (f) $\begin{array}{r} 7058 \\ +5295 \\ \hline 12353 \end{array}$ (g) $\begin{array}{r} 58610 \\ +23205 \\ \hline 81815 \end{array}$ (h) $\begin{array}{r} 79005 \\ +15249 \\ \hline 94254 \end{array}$

Test Prep 8.2

Sol.1. Write the new number with the Eknyunena purvena of :

(a) 7 in number 37 = $3\dot{7}$ = 27
(b) 2 in number 623 = $6\dot{2}3$ = 523
(c) 6 in number 760 = $7\dot{6}0$ = 660
(d) 8 in number 1826 = $1\dot{8}26$ = 0826
(e) 5 in number 7531 = $7\dot{5}31$ = 6531
(f) 2 in number 9682 = $96\dot{8}2$ = 9672

Sol.2.
(a) $\begin{array}{r} 43 \\ -27 \\ \hline 16 \end{array}$ (b) $\begin{array}{r} 781 \\ -273 \\ \hline 508 \end{array}$ (c) $\begin{array}{r} 874 \\ -687 \\ \hline 187 \end{array}$

(d) $\begin{array}{r} 6437 \\ -2329 \\ \hline 4108 \end{array}$ (e) $\begin{array}{r} 8942 \\ -3424 \\ \hline 5518 \end{array}$ (f) $\begin{array}{r} 87399 \\ -44815 \\ \hline 42584 \end{array}$

(g) $\begin{array}{r} 738417 \\ -333145 \\ \hline 405272 \end{array}$ (h) $\begin{array}{r} 939012 \\ -126788 \\ \hline 812224 \end{array}$

Maths Skills

Sol.1. Write the Ekhadhikena Purvena of :

(a) 8 in number 83 = $\dot{0}83$ = 183
(b) 4 in number 148 = $\dot{1}48$ = 248
(c) 2 in number 257 = $\dot{0}257$ = 1257

(d) 3 in number 63 = $\dot{6}3$ = 73

(e) 7 in number 273 = $\dot{2}73$ = 373

(f) 2 in number 6235 = $\dot{6}235$ = 7235

Sol.2. (a) 28 + 15 = 43 (b) 34 + 28 + 13 = 75 (c) 294 + 842 = 1136

(d) 9234 + 5971 = 15205 (e) 88034 + 71453 = 159487 (f) 84517 + 73928 + 62973 = 221418

(g) 935354 + 512231 = 1447585 (h) 944010 + 823205 = 1767215

Sol.3. (a) 6 in number 860 = $\dot{8}60$ = 760

(b) 7 in number 571 = $5\dot{7}1$ = 471

(c) 0 in number 1410 = $14\dot{1}0$ = 1400

(d) 5 in number 6532 = $\dot{6}532$ = 5532

(e) 3 in number 9873 = $987\dot{3}$ = 9863

Sol.4. (a) 43 − 17 = 26 (b) 84 − 57 = 27 (c) 4356 − 2872 = 1484

(d) 5669 − 2263 = 3406 (e) 78505 − 76768 = 01737 (f) 64485 − 59293 = 05192

(g) 606167 − 125052 = 481115 (h) 908902 − 427260 = 481642

Maths Olympiad

Sol.1. (a) ($\dot{}$)

Sol.2. (c) greater

Sol.3. (b) reciprocal

Sol.4. (b) less

Sol.5. (d) $\dot{7}$

Sol.6. (a) $\dot{3}\dot{2}\dot{4}$

Sol.7. $\dot{3}1 - 1\dot{3} = 21 - 14 = 7$ (b)

Sol.8. $\dot{2}3\dot{1} + \dot{4}\dot{5}3 = 332 + 543 = 875$ (c)

Chapter-9
Basic Geometrical Concepts

Test Prep 9.1

Sol.1. (a) A ray has <u>one</u> and point.

(b) A <u>line</u> cannot be drawn on paper.

(c) A <u>line</u> does not have definite length.

(d) A <u>line segment</u> has to end points.

(e) A <u>line segment</u> can be drawn on paper.

Sol.2. (a) line, $\overleftrightarrow{PQ}$ (b) ray, $\overrightarrow{MN}$

(c)line segment, AB (d) line segment $\overline{LM}$

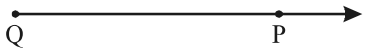
Sol.3. (d) Do yourself

Sol.4. (a) Do yourself

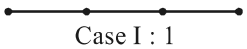
Sol.5. (a) 6 (b) 6 (c) 5 (d) 7

Sol.6. BA, CA, DA, EA, DE, CE, BE, AE

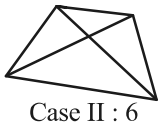
Sol.7.



Sol.8.



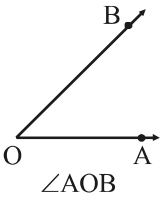
Case I : 1



Case II : 6

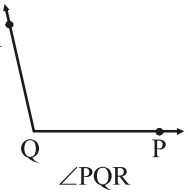
Test Prep 9.2

Sol.1. (a)



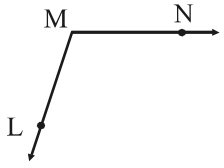
∠AOB

(b)



∠PQR

(c)



∠LMN

Sol.2. (a) Angles ∠AOB or ∠BOA

Arms : OA and OB

Vertex : O

(b) Angles ∠ PQR or ∠ RQP

Arms : QR and QP

Vertex : Q

(c) Angles : ∠EOF or ∠FOE

Arms : OF or OE

Vertex : O

Sol.3. (a) Interior points = P

Exterior points = M, T, S, R

(b) Interior points = L, M

Exterior points = A, N, J

Sol.4. (a) 3 ; ∠ COB, ∠ COA, ∠ BOA

(b) 5 ; ∠AOQ, ∠AOB, ∠BOQ, ∠BOP, ∠POA

Test Prep 9.3

Sol.1. (a) open figure (b) closed figure
(c) open figure (d) open figure
(e) closed figure (f) closed figure
(g) closed figure (h) open figure

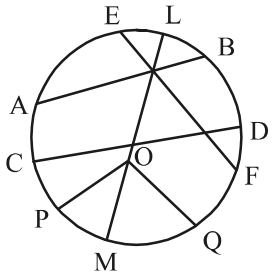
Sol.2. (a) No (b) No (c) Yes (d) No
(e) Yes (f) Yes (g) No (h) Yes

Sol.3. (a) Triangle (b) Rectangle
(c) Square (d) Hexagon

Sol.4. (a) A polygon is a figure formed by line segments.
(b) A polygon formed by three line segments is called triangle.
(c) A polygon formed by four line segments is called quadrilateral.
(d) A polygon formed by five line segments is called pentagon.
(e) A quadrilateral has 4 vertices and 4 sides.
(f) In a rectangle, opposite sides are equal.
(g) In a square all sides are equal.
(h) A triangle has 3 sides, 3 vertices and 3 angles.

Test Prep 9.4

Sol.1.



(a) Centre = 0
(b) radius = OP, OM, OQ, OC, OD, OL
(c) Chord = CD, AB, LM, AB, EF
(d) diameter = CD, LM

Sol.2. (a) Diameter = 2 × radius = 2 × 7 cm = 14 cm
(b) Diameter = 2 × 9 cm = 18 cm
(c) Diameter = 2 × 15 cm = 30 cm
(d) Diameter = 2 × 18 cm = 36 cm
(e) Diameter = 2 × 20 cm = 40 cm
(f) Diameter = 2 × 23 cm = 46 cm

Sol.3. (a) Radius = $\frac{\text{Diameter}}{2} = \frac{22}{2}$ cm = 11 cm

(b) Radius = $\frac{38}{2}$ cm = 19 cm

(c) Radius = $\frac{40}{2}$ cm = 20 cm

(d) Radius = $\frac{54}{2}$ cm = 27 cm

(e) Radius = $\frac{66}{2}$ cm = 33 cm

(f) Radius = $\frac{98}{2}$ cm = 49 cm

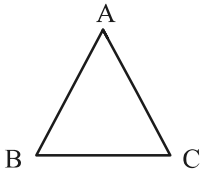
Sol.4. (a) Diameter is 2 × radius.
(b) Longest chord of the circle is diameter.
(c) All radii of a circle are of equal length.
(d) Point from where all points on the circle are at equal distance is called centre.

Maths Skills

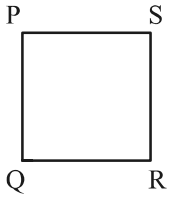
Sol.1. (a) point of intersection
(b) curved line
(c) perpendicular
(d) equal

Sol.2. (a) No (b) Yes (c) Yes (d) No

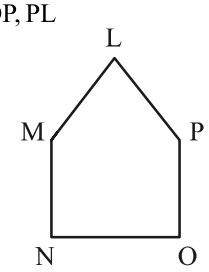
Sol.3. (a) Sides : AB, BC, CA
Vertices : A, B, C



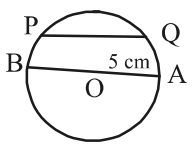
(b) Sides : PQ, QR, RS, SP
Vertices : P, Q, R, S



(c) Sides : LM, MN, NO, OP, PL
Vertices : L, M, N, O, P



Sol.4.

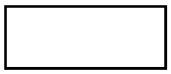


Sol.5. (a) Yes (b) No (c) No

HOTS

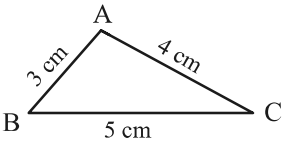
Sol.1. Rectangle

Sol.2. Yes, rectangle

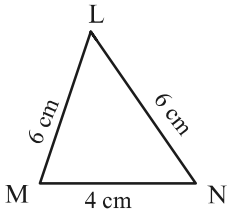


Sol.3.

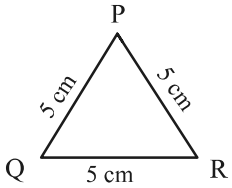
Sol.4. I have studied three type of triangles:



Scalene triangle



Isosceles triangle



Equilateral triangle

Maths Olympiad

Sol.1. (d)

Sol.2. (c) line

Sol.3. (d) 28

Sol.4. (c) line segment

Sol.5. (b) 8

Sol.6. (a) railway track

Sol.7. (c) 7

Examination Preparation - I

Sol.1. (i) Sum = 300000 + 300 = 300300 (b)

(ii) 10 lakh = 1000000

∴ (c) 6

(iii) Rounding off to nearest 1000 :

7695 → 8000

3296 → + 3000

Sum = 11000 ∴ (c) 11000

(iv) Smallest 5-digit = 9991 + 9 = 10000

So, the number is 9991.

∴ (d) 9991

(v) (c) 8

Sol.2. (a) 8

(b) 145

(c) 3

(d) 1

(e) $\overline{AB}$

Sol.3. (a) true (b) false (c) false

(d) true (e) false

Sol.4. (a) XLV = 45 and LXV = 65

∴ 45 < 65

XLV $\boxed{<}$ LXV

(b) XXIX = 29 and XXXI = 31

∴ 29 < 31

XXIX $\boxed{<}$ XXXI

(c) LXII = 62 and XLII = 42

∴ 62 > 42

LXII $\boxed{>}$ XLII

(d) LXII = 62 and XLVIII = 48

∴ 62 > 48

LXII $\boxed{>}$ XLVIII

(e) XXXV = 35 and XXVIII = 28

∴ 35 > 28

XXV $\boxed{>}$ XXVIII

(f) XCIX = 99 and XCIV = 94

∴ 99 > 94

XCIX $\boxed{>}$ XCIV

Sol.5. (a) 9287 → 9300 (b) 20436 → 20400

(c) 17025 → 17000 (d) 42272 → 42300

Sol.6.

No. of men	=	4 2 6 9 8 2
No. of women	=	3 7 5 8 1 6
No. of children	=	+ 2 1 6 0 8 4
Population of the city	=	1 0 1 8 8 8 2

Sol.7.

Money with Amar	=	₹ 8 9 9 0 0 4
Cost of house	=	– ₹ 7 9 9 8 5 6
Balance	=	₹ 9 9 1 4 8

Sol.8. Contribution of 1 student = ₹ 155

Contribution of 3265 = ₹ 155 × 3265

= ₹ 506075

```
  3265
 × 155
 16325
163250
326500
506075
```

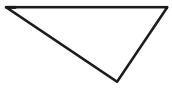
Sol.9. No. of begs in 16 trucks = 2416

No. of bags in 1 truck = 2416 ÷ 16 = 151

$$\begin{array}{r} 151 \\ 16\overline{)2416} \\ -16 \\ \hline 81 \\ -80 \\ \hline 16 \\ -16 \\ \hline 0 \end{array}$$

Sol.10. Do yourself

Sol.11.

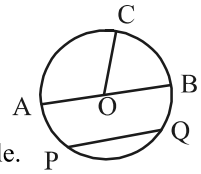


No. of line segments = 3

Sol.12. (a) AB is a <u>diameter</u> of the circle.

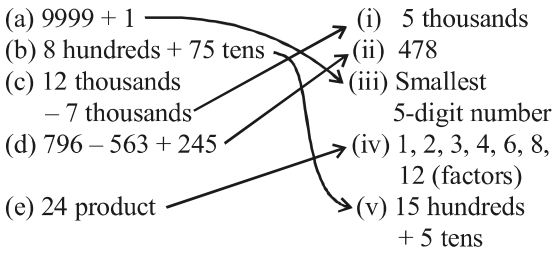
(b) OC is a <u>radius</u> of the circle.

(c) PQ is a <u>chord</u> of the circle.



Sol.13. (a) , (b) and (c).

Sol.14.



Sol.15. (a) 2961485 = Twenty nine lakh sixty-one thousand four hundred eighty-five

2,961,485 = Two million nine hundred sixty-one thousand four hundred eighty-five

(b)82,89,617 = Eighty-two lakh eighty-nine thousand six hundred seventeen

8,289,617 = Eight million two hundred eighty-nine thousand six hundred seventeen

(c) 61,89,532 = Sixty-one lakh eighty-nine thousand five hundred thirty-two

6,189,532 = Six million one hundred eighty-nine thousand five hundred thirty two

Sol.16. (a) XII + VIII = 12 + 8 = 20 = XX

(b) XL – X = 40 – 10 = 30 = XXX

(c) L – XX = 50 – 20 = 30 = XXX

(d) 5 × 32 × 2 = (5 × 2) × 32 = 32 × 10 = 320

(e) (20 × 143) ÷ 5 = 2860 ÷ 5 = 572

(f) 2750 ÷ (6 + 4) = 2750 ÷ 10 = 275

Sol.17. (a)

$$\begin{array}{r} 4\ 3\ 7\ 8\ 8 \\ +\ 3\ \boxed{2}\ \boxed{4}\ 9\ \boxed{5} \\ \hline \boxed{7}\ 6\ 2\ \boxed{8}\ 3 \end{array}$$

(b)

$$\begin{array}{r} 7\ 6\ 8\ 5\ 9\ 4 \\ -\ 5\ \boxed{1}\ \boxed{4}\ 1\ 3\ \boxed{1} \\ \hline \boxed{2}\ 5\ \boxed{4}\ 4\ \boxed{6}\ 3 \end{array}$$

Chapter-10
Multiples and Factors

<u>Test Prep 10.1</u>

Sol.1. (a) the number itself

(b) the number itself

(c) one

(d) 0.1

(e) infinite

(f) multiple

(g) 8, 4

(h) 2, 3, 4

Sol.2. (a) Five multiples of 4 = 4, 8, 12, 16, 20

(b) Four multiples of 9 = 9, 18, 27, 36

(c) Six multiples of 12 = 12, 24, 36, 48, 60, 72

(d) Eight multiples of 10 = 10, 20, 30, 40, 50, 60, 70, 80

Sol.3. (a) 7, 14, 21, 28, 35, 42, 49, 56

(b) 8, 16, 24, 32, 40, 48, 56, 64

Sol.4. (a)

$$\begin{array}{r} 21 \\ 4\overline{)84} \\ -8 \\ \hline 04 \\ -4 \\ \hline 0 \end{array}$$

Here, remainder = 0

So, 84 is a mutiple of 4.

(b)

$$\begin{array}{r} 72 \\ 8\overline{)576} \\ -56 \\ \hline 16 \\ -16 \\ \hline 0 \end{array}$$

Here, remainder = 0

So, 576 is a multiple of 8.

(c)

$$\begin{array}{r} 89 \\ 12\overline{)1068} \\ -96 \\ \hline 108 \\ -108 \\ \hline 0 \end{array}$$

Here, remainder = 0

So, 1068 is a mutiple of 12.

(d)

$$\begin{array}{r} 236 \\ 19\overline{)4484} \\ -38 \\ \hline 068 \\ -57 \\ \hline 114 \\ -114 \\ \hline 0 \end{array}$$

Here, remainder = 0

So, 4484 is a multiple of 19.

Sol.5. (a) 7th multiple of 12 = 12 × 7 = 84

(b) 8th multiple of 20 = 20 ×8 = 160

Test Prep 10.2

Sol.1. (a) Multiples of 5 = 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

Multiples of 6 = 6, 12, 18, 24, 30, 36, 42, 48, 54, 60

Common multiples = 30

(b) Multiples of 4 = 4, 8, 12, 16, 20, 24, 28, 32, 36, 40

Multiples of 5 = 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

Common multiples = 20, 40

(c) Multiples of 8 = 8, 16, 24, 32, 40, 48, 56, 64, 72, 80

Multiples of 10 = 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Common multiples = 40, 80

(d) Multiples of 9 = 9, 18, 27, 36, 45, 54, 63, 72, 81, 90

Multiples of 12 = 12, 24, 36, 48, 60, 72, 84, 96, 108, 120

Common multiples = 36, 72

(e) Multiples of 5 = 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

Multiples of 10 = 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Common multiples = 10, 20, 30, 40, 50

(f) Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30

Multiples of 9 = 9, 18, 27, 36, 45, 54, 63, 72, 81, 90

Common multiples = 9, 18, 27

(g) Multiples of 10 = 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Multiples of 20 = 20, 40, 60, 80, 100, 120, 140, 160, 180, 200

Common multiples = 20, 40, 60, 80, 100

(h) Multiples of 15 = 15, 30, 45, 60, 75, 90, 105, 120, 135, 150

Multiples of 20 = 20, 40, 60, 80, 100, 120, 140, 160, 180, 200

Common multiples = 60, 120

Sol.2. (a) Multiples of 2 = 2, 4, 6, 8, 10, 12, 14, 16, ...

Multiples of 8 = 8, 16, 24, ...

Common multiples = 8, 16, ...

Smallest common multiple = 8

So, LCM of 2 and 8 = 8

(b) Multiples of 15 = 15, 30, 45, 60, 75, 90, ...

Multiples of 18 = 18, 36, 54, 72, 90, ...

Common multiples = 90, ...

Smallest common multiple = 90

So, LCM of 15 and 18 = 90

(c) Multiples of 6 = 6, 12, 18, 24, 30, 36, 42, 48, ...

Multiples of 8 = 8, 16, 24, 32, 40, 48 .....

Common multiples = 24, 48, ...

Smallest common multiple = 24

So, LCM of 6 and 8 = 24

(d) Multiples of 12 = 12, 24, 36, 48, ...

Multiples of 24 = 24, 48, 72, 96, ...

Common multiples = 24, 48, ...

Smallest common multiple = 24

So, LCM of 12 and 24 = 24

(e) Multiples of 2 = 2, 4, 6, 8, 10, 12, ...

Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, ...

Multiples of 4 = 4, 8, 12, 16, ...

Common multiples = 12, ...

Smallest common multiple = 12

So, LCM of 2, 3 and 4 = 12

(f) Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, ...

Multiples of 4 = 4, 8, 12, 16, 20, 24, ...

Multiples of 6 = 6, 12, 18, 24, ...

Common multiples = 12, 24, ...

Smallest common multiple = 12

So, LCM of 3, 4 and 6 = 12

(g) Multiples of 16 = 16, 32, 48, 64, 80, 96, 112, 128, 144, 160, 176, 192, 208, 224, 240 ....

Multiples of 20 = 20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 220, 240, ...

Multiples of 24 = 24, 48, 72, 96, 120, 144, 168, 192, 216, 240 ....

Common multiples = 240, ...

Smallest common multiple = 240

So, LCM of 16, 20, 24 = 240

(h) Multiples of 18 = 18, 36, 54, 72, 90, 108, 126, 144, 162, 180, 198, 216, 234, 252, 270, 288, 306, 324, 342, 360 ....

Multiples of 24 = 24, 48, 72, 96, 120, 144, 168, 192, 216, 240, 264, 288, 312, 336, 360 .....

Multiples of 30 = 30, 60, 90, 120, 150, 180, 210, 240, 270, 300, 330, 360, ...

LCM = 360

Sol.3. (a) Multiples 5 = 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72, 78

(b) Multiples 9 = 9, 18, 27, 36, 45, 54, 63, 72, 81

(c) Common multiples of 6 and 9 = 18, 36, 54,72,

(d) LCM of 6 and 9 = 18

Test Prep 10.3

Sol.1. (a) $20 \div 1 = 20$
$20 \div 2 = 10$
$20 \div 4 = 5$
$20 \div 5 = 4$
$20 \div 10 = 2$
$20 \div 20 = 1$
Thus, 1, 2, 4, 5, 10 and 20 are the factors of 20.
(b) $28 \div 1 = 28$
$28 \div 2 = 14$
$28 \div 4 = 7$
$28 \div 7 = 4$
$28 \div 14 = 2$
$28 \div 28 = 1$
Thus, 1, 2, 4, 7, 14 and 28 are the factors of 28.
(c) $54 \div 1 = 54$
$54 \div 2 = 27$
$54 \div 3 = 18$
$54 \div 6 = 9$
$54 \div 18 = 3$
$54 \div 27 = 2$
$54 \div 54 = 1$
Thus, 1, 2, 3, 6, 9, 18, 27, 54 are the factors of 54.
(d) $84 \div 1 = 84$
$84 \div 2 = 42$
$84 \div 3 = 28$
$84 \div 4 = 21$
$84 \div 6 = 14$
$84 \div 7 = 12$
$84 \div 12 = 7$
$84 \div 14 = 6$
$84 \div 21 = 4$
$84 \div 28 = 3$
$84 \div 42 = 2$
$84 \div 84 = 1$
Thus, 1, 2, 3, 4, 6, 7, 12, 14, 21, 28, 42, 84 are the factors of 84.

Test Prep 10.3

Sol.1. (a) $1 \times 27 = 27$
$3 \times 9 = 27$
$9 \times 3 = 27$
$27 \times 1 = 27$
So, the factors of 27 are 1, 3, 9, 27 are factors of 27.
(b) $1 \times 42 = 42$
$2 \times 21 = 42$
$3 \times 14 = 42$
$6 \times 7 = 42$
$7 \times 6 = 42$
$14 \times 3 = 42$
$21 \times 2 = 42$
$42 \times 1 = 42$
So, the factors of 42 are 1, 2, 3, 6, 7, 14, 21, 42.
(c) $1 \times 56 = 56$
$2 \times 28 = 56$
$4 \times 14 = 56$
$7 \times 8 = 56$
$8 \times 7 = 56$
$14 \times 4 = 56$
$28 \times 2 = 56$
$56 \times 1 = 56$
So, the factors of 56 are 1, 2, 4, 7, 8, 14, 28, 56.
(d) $1 \times 72 = 72$
$2 \times 36 = 72$
$3 \times 24 = 72$
$4 \times 18 = 72$
$6 \times 12 = 72$
$8 \times 9 = 72$
$9 \times 8 = 72$
$12 \times 6 = 72$
$18 \times 4 = 72$
$24 \times 3 = 72$
$36 \times 2 = 72$
$72 \times 1 = 72$
So, the factors of 72 are 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72.
(e) $1 \times 96 = 96$
$2 \times 48 = 96$
$3 \times 32 = 96$
$4 \times 24 = 96$
$6 \times 16 = 96$
$8 \times 12 = 96$
$12 \times 8 = 96$
$16 \times 6 = 96$
$24 \times 4 = 96$
$32 \times 3 = 96$
$48 \times 2 = 96$
$96 \times 1 = 96$
So, the factors of 96 are 1, 2, 3, 4, 6, 8, 12, 16, 24, 32, 48, 96.

Sol.3. (a)
$$\begin{array}{r} 29 \\ 7\overline{)203} \\ -14 \\ \hline 63 \\ -63 \\ \hline 0 \end{array}$$
Since, 7 divides 203 completely, So 7 is a factor of 203.

(b)
$$\begin{array}{r} 12 \\ 9\overline{)109} \\ -9 \\ \hline 19 \\ -18 \\ \hline 1 \end{array}$$

Since, 109 is not completely divisible by 9, so 9 is not a factor of 109.

(c)
$$\begin{array}{r} 119 \\ 16\overline{)1904} \\ -16 \\ \hline 30 \\ -16 \\ \hline 144 \\ -144 \\ \hline 0 \end{array}$$

Since, 1904 is completely divisible by 16, so 16 is a factor of 1904.

(d)
$$\begin{array}{r} 238 \\ 25\overline{)5950} \\ -50 \\ \hline 95 \\ -75 \\ \hline 200 \\ -200 \\ \hline 0 \end{array}$$

Since, 5950 is completely divisible by 25, so 25 is a factor of 5950.

Sol.4. (a) 1
(b) number itself
(c) remainder
(d) factors

Test Prep 10.4

Sol.1. Even numbers = 14, 26, 56, 62, 84

Sol.2. Odd numbers = 5, 11, 27, 35, 47, 63, 67, 73, 79

Sol.3. (a) First ten even numbers = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20.
(b) Last ten 2-digit even numbers = 98, 96, 94, 92, 90, 88, 86, 84, 82, 80.
(c) First ten odd numbers = 1, 3, 5, 7, 9, 11, 13, 15, 17, 19.
(d) Last ten 2-digit odd numbers = 99, 97, 95, 93, 91, 89, 87, 85, 83, 81.

Sol.4. (a) 36, 38, 40, 42, 44, 46, 48, 50
(b) 137, 139, 141, 143, 145, 147, 149, 151, 153, 155, 157, 159, 161

Sol.5. (a) 2, 3, 5, 7, 11, 13, 17, 19
(b) 11, 13, 17, 19, 23, 29

Sol.6. (a) 4, 6, 8, 9, 10, 12, 14
(b) 21, 22, 24, 25, 26, 27, 28, 30, 32, 33, 34, 35, 36, 38, 39

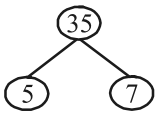
Sol.7. (a) 7, 19, 23, 31, (b) 3, 13, 37

Sol.8. (a) 14, 52, 25 (b) 15, 26, 39, 50

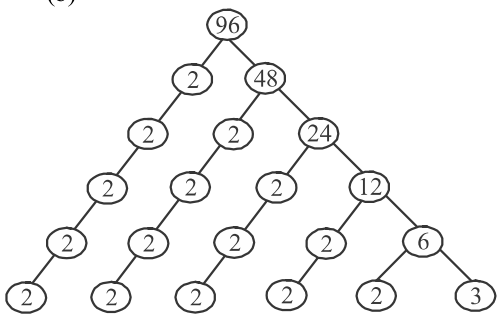
Sol.9. (a) False (b) True
(c) False (d) False

Test Prep 10.5

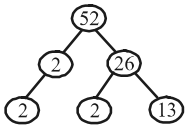
Sol.1. (a)



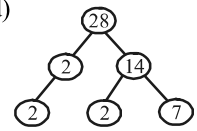
(b)



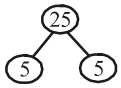
(c)



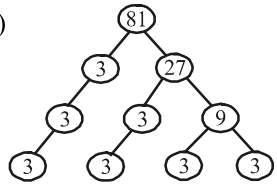
(d)



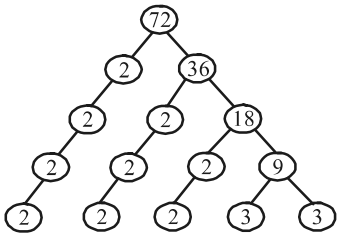
(e)



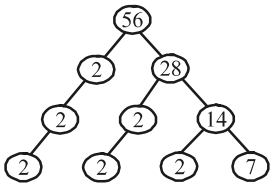
(f)



(g)



(h)



Sol.2. (a) Factors of 4 = 1, 2, 4
Factors of 10 = 1, 2, 5, 10
Common factors = 1, 2

(b) Factors of 9 = 1, 3, 9
Factors of 27 = 1, 3, 9, 27
Common factors = 1, 3, 9

(c) Factors of 12 = 1, 2, 3, 4, 6, 12
Factors of 20 = 1, 2, 4, 5, 10, 20
Common factors = 1, 2, 4

(d) Factors of 24 = 1, 2, 3, 4, 6, 8, 12, 24
Factors of 33 = 1, 3, 11, 33
Common factors = 1, 3

(e) Factors of 45 = 1, 3, 5, 9, 15, 45
Factors of 60 = 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60
Common factors = 1, 3, 5, 15

(f) Factors of 12 = 1, 2, 3, 4, 6, 12
Factors of 18 = 1, 2, 3, 6, 9, 18
Factors of 36 = 1, 2, 3, 4, 6, 9, 12, 18, 36
Common factors = 1, 2, 3, 6

Sol.3. (a) Factors of 4 = 1, 2, 4
Factors of 6 = 1, 2, 3, 6
Common factors = 1, 2

(b) Factors of 9 = 1, 3, 9
Factors of 15 = 1, 3, 5, 15
Common factors = 1, 3
HCF = 3

(c) Factors of 30 = 1, 2, 3, 5, 6, 10, 15, 30
Factors of 40 = 1, 2, 4, 5, 8, 10, 20, 40
Common factors = 1, 2, 5, 10
HCF = 10

(d) Factors of 16 = 1, 2, 4, 8, 16
Factors of 20 = 1, 2, 4, 5, 10, 20
Common factors = 1, 2, 4
HCF = 4

(e) Factors of 6 = 1, 2, 3, 6
Factors of 12 = 1, 2, 3, 4, 6, 12
Factors of = 1, 2, 3, 4, 6, 8, 12, 24
Common factors = 1, 2, 3, 6
HCF = 6

(f) Factors of 25 = 1, 5, 25
Factors of 45 = 1, 3, 5, 9, 15, 45
Factors of 50 = 1, 5, 10, 25, 50
Common factors of = 1, 5
HCF = 5

Sol.4. (a) Factors of 81 = 1, 3, 9, 27, 81
Factors of 9 = 1, 3, 9
HCF = 9
LCM = 81
HCF × LCM = 9 × 81 = 729
Product of numbers = 9 × 81 = 729
So, HCF × LCM = product of numbers

(b) HCF × LCM = product of numbers = 15 × 225 = 3375

(c) HCF × LCM = product of numbers = 17 × 102 = 1734

(d) HCF × LCM = product of numbers = 12 × 96 = 1152

Sol.5. (a) Factors of 9 = 1, 3, 9
Factors of 12 = 1, 2, 3, 4, 6, 12
Common factors = 1, 3
Since, 9 and 12 have one more factors (3) other than 1, so 9 and 12 are not co-primes.

(b) Factors of 3 = 1, 3
Factors of 8 = 1, 2, 4, 8
Since, 3 and 8 do not have any factor common other than 1 so 3 and 8 are co-primes.

(c) Factors of 15 = 1, 3, 5, 15
Factors of 3 = 1, 3
Since, 15 and 3 have one more factors (3) other than 1, so 15 and 3 are not co-primes.

Test Prep 10.6

Sol.1.

Numbers	Ones place	Divisible by 2
(a) 62	2	Yes
(b) 95	5	No
(c) 723	3	No
(d) 456	6	Yes
(e) 9404	4	Yes
(f) 7597	7	No
(g) 4050	0	Yes
(h) 8591	1	No

Sol.2.

Numbers	Sum of the digits	Divisible by 3
(a) 732	7 + 3 + 2 = 12	Yes
(b) 4953	4 + 9 + 5 + 3 = 21	Yes
(c) 2460	2 + 4 + 6 + 0 = 12	Yes
(d) 5022	5 + 0 + 2 + 2 = 9	Yes
(e) 90162	9 + 0 + 1 + 6 + 2 = 18	Yes
(f) 12354	1 + 2 + 3 + 5 + 4 = 15	Yes
(g) 93612	9 + 3 + 6 + 1 + 2 = 21	Yes
(h) 28702	2 + 8 + 7 + 0 + 2 = 19	No

Sol.3.

Numbers	Ones place	Divisible by 5
(a) 609	9	No
(b) 705	5	Yes
(c) 1000	0	Yes
(d) 4554	4	No
(e) 9305	5	Yes
(f) 6340	0	Yes
(g) 1235	5	Yes
(h) 9336	6	No

Sol.4.

Numbers	Divisible by 2	Divisible by 3	Divisible by 6
(a) 236	Yes	2+3+6= 11 (No)	No
(b) 978	Yes	9+7+8= 24 (Yes)	Yes
(c) 7848	Yes	7+8+4+8 = 27 (Yes)	Yes
(d) 9999	No	9+9+9+9 = 36 (Yes)	No
(e) 12322	Yes	1+2+3+2+2= 10 (No)	No
(f) 17076	Yes	1+7+0+7+6= 21 (Yes)	Yes
(g) 15362	Yes	1+5+3+6+2 = 19 (No)	No
(h) 19284	Yes	1+9+2+8+4 = 24 (Yes)	Yes

Sol.5.

Numbers	Sum of the digits	Divisible by 9
(a) 3897	3 + 8 + 9 + 7 = 27	Yes
(b) 4608	4 + 6 + 0 + 8 = 18	Yes
(c) 6002	6 + 0 + 0 + 2 = 8	No
(d) 53102	5 + 3 + 1 + 0 + 2 = 11	No
(e) 71804	7 + 1 + 8 + 0 + 4 = 20	No
(f) 25074	2 + 5 + 0 + 7 + 4 = 18	Yes
(g) 23549	2 + 3 + 5 + 4 + 9 = 23	No
(h) 63027	6 + 3 + 0 + 2 + 7 = 18	Yes

Sol.6.

Numbers	Ones place	Divisible by 10
(a) 2705	5	No
(b) 9000	0	Yes
(c) 7540	0	Yes
(d) 9325	5	No
(e) 3570	0	Yes
(f) 46351	1	No
(g) 81530	0	Yes
(h) 913505	5	No

Maths Skills

Sol.1. (a) 8, 7
(b) 5, 9
(c) 6
(d) factors
(e) factors
(f) 30

Sol.2. (a) Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24
Multiples of 4 = 4, 8, 12, 16, 20, 24
First two common multiples = 12, 24
(b) Multiples of 4 = 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72
Multiples of 6 = 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72
Multiples of 8 = 8, 16, 24, 32, 40, 48, 56, 64, 72
First three common multiples of 4, 6, 8 = 24, 48, 72

Sol.3. (a) Factors of 15 = 1, 3, 5, 15
(b) Factors of 21 = 1, 3, 7, 21
(c) Factors of 30 = 1, 2, 3, 5, 6, 15, 30
(d) Factors of 56 = 1, 2, 4, 7, 8, 14, 28, 56

Sol.4. (a) 36, 38, 40, 42, 44, 46, 48, 50, 52, 54
(b) 40, 45, 50
(c) 40, 50
(d) 40, 50
(e) 40, 50
(f) 36, 42, 48, 54

Sol.5. (a) 31, 37
(b) 12, 14, 15, 16, 18, 20, 21, 22, 24, 25, 26, 27, 28

Sol.6. (a) Factors of 28 = 1, 2, 4, 7, 14, 28
Factors of 42 = 1, 2, 3, 6, 7, 14, 21, 42
Common factors of = 1, 2, 7, 14
(b) Factors of 24 = 1, 2, 3, 4, 6, 8, 12, 24
Factors of 36 = 1, 2, 3, 4, 6, 9, 12, 18, 36
Common factors of = 1, 2, 3, 4, 6, 12

(c) Factors of 18 = 1, 2, 3, 6, 9, 18
Factors of 24 = 1, 2, 3, 4, 6, 8, 12, 24
Common factors of = 1, 2, 3, 6
(d) Factors of 25 = 1, 5, 25
Factors of 40 = 1, 2, 5, 8, 10, 20, 40
Common factors of = 1, 5

Sol.7.
$$\begin{array}{r} 103 \\ 12\overline{)1246} \\ -12 \\ \hline 46 \\ -36 \\ \hline 10 \end{array}$$
Since 1246 is not completely divisible by 12, it is not a factor of 1246.

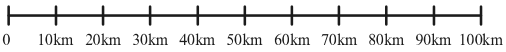
Sol.8.
$$\begin{array}{r} 9 \\ 25\overline{)245} \\ -225 \\ \hline 20 \end{array}$$
Since 245 is not completely divisible by 25, so 25 is not a factor of 245.

Sol.9. (a) Factors of 14 = 1, 2, 7, 14
Factors of 42 = 1, 2, 3, 6, 7, 14, 21, 42
HCF = 14
(b) Factors of 27 = 1, 3, 9, 27
Factors of 36 = 1, 2, 3, 6, 9, 12, 18, 36
HCF = 9
(c) Factors of 56 = 1, 2, 4, 7, 8, 14, 28, 56
Factors of 96 = 1, 2, 3, 4, 6, 8, 12, 16, 24, 32, 48, 96
HCF = 8

Sol.10. (a) Multiples of 6 = 6, 12, 18, 24, 30, 36, ...
Multiples of 9 = 9, 18, 27, 36, ...
LCM = 18
(b) Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24 ....
Multiples of 4 = 4, 8, 12, 16, 20, 24, ...
Multiples of 6 = 6, 12, 18, 24, ...
LCM = 12
(c) Multiples of 10 = 10, 20, 30, 40, 50, 60, ...
Multiples of 15 = 15, 30, 45, 60, ...
Multiples of 20 = 20, 40, 60, ...
LCM = 60

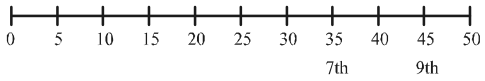
HOTS

Sol.1.



We see there are 4 petrol pumps on the high way between 50th and 100th km.

Sol.2.

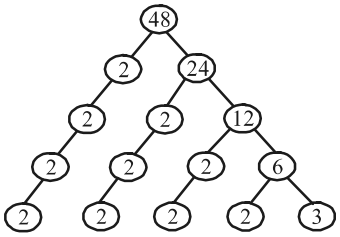


At 7th point the distance = 35 km
At 9th point the distance = 45 km

Maths Olympiad

Sol.1. (b) 0, 1
Sol.2. (a) 2
Sol.3. Factors of 36 = 1, 2, 3, 4, 6, 9, 12, 18, 36
(d) nine
Sol.4. (c) 13
Sol.5. Last two digits of 8520 is divisible by 4.
So, it is divisible by 4.
Sum of digits = 8 + 5 + 2 + 0 = 15, which is divisible by 3.
8520 is divisible by 6.
Thus, (d) all of these
Sol.6. (d) 57

Sol.7.



So, (c) $2 \times 2 \times 2 \times 2 \times 3$

Sol.8. Least prime number + least composite number = 2 + 4 = 6 (d)

Chapter-11
Fractions

Test Prep 11.1

Sol.1. (a) Since, $\frac{3}{5} = \frac{3\times2}{5\times2} = \frac{3\times3}{5\times3} = \frac{3\times4}{5\times4} = \frac{3\times5}{5\times5}$
$= \frac{6}{10} = \frac{9}{15} = \frac{12}{20} = \frac{15}{25}$
Thus, $\frac{6}{10}, \frac{9}{15}, \frac{12}{20}, \frac{15}{25}$ are four fractions equivalent to $\frac{3}{5}$.

(b) Since, $\frac{4}{7} = \frac{4\times2}{7\times2} = \frac{4\times3}{7\times3} = \frac{4\times4}{7\times4} = \frac{4\times5}{7\times5}$
$= \frac{8}{14} = \frac{12}{21} = \frac{16}{28} = \frac{20}{35}$

Thus, $\frac{8}{14}, \frac{12}{21}, \frac{16}{28}, \frac{20}{35}$ are four fractions equivalent to $\frac{4}{7}$.

(c) Since, $\frac{5}{8} = \frac{5\times2}{8\times2} = \frac{5\times3}{8\times3} = \frac{5\times4}{8\times4} = \frac{5\times5}{8\times5}$

$= \frac{10}{16} = \frac{15}{24} = \frac{20}{32} = \frac{25}{40}$

Thus, $\frac{10}{16}, \frac{15}{24}, \frac{20}{32}, \frac{25}{40}$ are four fractions equivalent to $\frac{5}{8}$.

(d) Since, $\frac{9}{11} = \frac{9\times2}{11\times2} = \frac{9\times3}{11\times3} = \frac{9\times4}{11\times4} = \frac{9\times5}{11\times5}$

$= \frac{18}{22} = \frac{27}{33} = \frac{36}{44} = \frac{45}{55}$

Sol.2. Given, fraction $= \frac{5}{9}$

(a) To get 55 as numerator, we have to multiply the numerator and denominator by 11.

$$\frac{5}{9} = \frac{5\times11}{9\times11} = \frac{55}{99}$$

(b) To get denominator as 63, we have to multiply the denominator and numerator by 7.

$$\frac{5}{9} = \frac{5\times7}{9\times7} = \frac{35}{63}$$

(c) To get numerator as 60, we have to multiply the denominator and numerator by 12.

$$\frac{5}{9} = \frac{5\times12}{9\times12} = \frac{60}{108}$$

(d) To get 27 as denominator, we have to multiply the denominator and numerator by 3.

$$\frac{5}{9} = \frac{5\times3}{9\times3} = \frac{15}{27}$$

Sol.3. (a) To get 7 as numerator, we have to divide numerator and denominator by 5.

$$\frac{35}{40} = \frac{35\div5}{40\div5} = \frac{7}{8}$$

(b) To get 8 as denominator, we have to divide denominators and numerator by 5.

$$\frac{35}{40} = \frac{35\div5}{40\div5} = \frac{7}{8}$$

Sol.4. (a) Given $\frac{6}{7} \times \frac{9}{21}$

$6\times21 = 126$

and $9\times7 = 63$

Since, $6\times21 \neq 9\times7$

Thus, $\frac{6}{7}$ and $\frac{7}{21}$ are not equivalent

(b) Here $\frac{2}{7} \times \frac{8}{28}$

$2\times28 = 56$

and $8\times7 = 56$

Since, $2\times28 = 8\times7$

So, $\frac{2}{7}$ and $\frac{8}{28}$ are equivalent

(c) Here $\frac{4}{9} \times \frac{36}{84}$

$4\times84 = 336$

and $9\times36 = 324$

Since, $4\times84 = 9\times36$

So, $\frac{4}{9}$ and $\frac{36}{84}$ are not equivalent

(d) Here $\frac{25}{45} \times \frac{10}{18}$

$25\times18 = 450$

and $45\times10 = 450$

Since, $25\times18 = 45\times10$

So, $\frac{25}{45}$ and $\frac{10}{18}$ are equivalent

Sol.5. (a) $\frac{5}{9} \times \frac{x}{81}$

$x\times9 = 5\times81$

$$x = \frac{5\times81}{9} = \frac{405}{9} = 45$$

So, $\frac{5}{9} = \frac{\boxed{45}}{81}$

(b) $\frac{1}{2} \times \frac{x}{4}$

$x\times2 = 1\times4$

$$x = \frac{1\times4}{2} = \frac{4}{2} = 2$$

So, $\frac{1}{2} = \frac{\boxed{2}}{4}$

(c) $\frac{3}{4} \times \frac{9}{x}$

$3 \times x = 4 \times 9$

$x = \frac{4 \times 9}{3} = \frac{36}{3} = 12$

So, $\frac{3}{4} = \frac{9}{\boxed{12}}$

(d) $\frac{2}{3} \times \frac{x}{12}$

$x \times 3 = 2 \times 12$

$x = \frac{24}{3} = 8$

So, $\frac{2}{3} = \frac{\boxed{8}}{12}$

(e) $\frac{4}{7} \times \frac{20}{x}$

$4 \times x = 7 \times 20$

$x = \frac{140}{4} = 35$

So, $\frac{4}{7} = \frac{20}{\boxed{35}}$

(f) $\frac{7}{35} \times \frac{x}{175}$

$x \times 35 = 7 \times 175$

$x = \frac{1225}{35} = 35$

Test Prep 11.2

Sol.1. (a) $\frac{15}{18} = \frac{1 \times 3 \times 5}{1 \times 2 \times 3 \times 3}$

Since, 15 and 18 have 3 as common factor other than 1, So $\frac{15}{18}$ is not in the lowest form.

(b) $\frac{9}{11} = \frac{1 \times 9}{1 \times 11}$

Since, 9 and 11 have only one common factor 1, So $\frac{9}{11}$ is in the lowest form.

(c) $\frac{6}{9} = \frac{1 \times 2 \times 3}{1 \times 3 \times 3}$

Since, 6 and 9 have 3 as common factor other than 1, So $\frac{6}{9}$ is not in the lowest form.

(d) $\frac{14}{15} = \frac{1 \times 2 \times 7}{1 \times 3 \times 5}$

Since, 14 and 15 have only one common factor other 1, So $\frac{14}{15}$ is in the lowest form.

(e) $\frac{14}{21} = \frac{1 \times 2 \times 7}{1 \times 3 \times 7}$

Since, 14 and 21 have 7 as common factor other than 1, So $\frac{14}{21}$ is not in the lowest form.

(f) $\frac{65}{55} = \frac{1 \times 5 \times 13}{1 \times 5 \times 11}$

Since, 65 and 55 have 5 as common factor other than1, So $\frac{65}{55}$ is not in the lowest form.

(g) $\frac{72}{77} = \frac{1 \times 2 \times 2 \times 2 \times 3 \times 3}{1 \times 7 \times 11}$

Since, 72 and 77 have only one common factor 1, So $\frac{72}{77}$ is in the lowest form.

(h) $\frac{88}{91} = \frac{1 \times 2 \times 2 \times 2 \times 11}{1 \times 7 \times 13}$

Since, 82 and 91 have only one common factor 1, So $\frac{88}{91}$ is in the lowest form.

Sol.2. (a) Factors of 9 = 1, 3, 9

Factors of 15 = 1, 3, 5, 15

HCF = 3

Dividing the numerator and denominator by 3.

$\frac{9}{15} = \frac{9 \div 3}{15 \div 3} = \frac{3}{5}$

Thus, $\frac{3}{5}$ is the lowest form of $\frac{9}{15}$.

Alternate method:

$\frac{9}{15} = \frac{1 \times 3 \times 3}{1 \times 3 \times 5} = \frac{1 \times 1 \times 3}{1 \times 1 \times 5} = \frac{3}{5}$

(b) Factors of 9 = 1, 3, 9

Factors of 24 = 1, 2, 3, 4, 6, 8, 12, 24

HCF = 3

$\therefore \frac{9}{24}=\frac{9\div 3}{24\div 3}=\frac{3}{8}$

Thus, $\frac{3}{8}$ is the lowest form of $\frac{9}{24}$.

Alternate method :

$\frac{9}{24}=\frac{1\times 3\times 3}{1\times 2\times 2\times 2\times 3}=\frac{1\times 3\times 1}{1\times 2\times 2\times 2\times 1}=\frac{3}{8}$

(c) Factors of 16 = 1, 2, 4, 8, 16

Factors of 12 = 1, 2, 3, 4, 6, 12

HCF = 4

$\therefore \frac{16}{12}=\frac{16\div 4}{12\div 4}=\frac{4}{3}$

Thus, $\frac{4}{3}$ is the lowest form of $\frac{16}{12}$.

Alternate method :

$\frac{16}{12}=\frac{1\times 2\times 2\times 2\times 2}{1\times 2\times 2\times 3}=\frac{1\times 2\times 2}{1\times 3}=\frac{4}{3}$

(d) Factors of 49 = 1, 7, 49

Factors of 56 = 1, 2, 4, 7, 8, 14, 28, 56

HCF = 7

$\therefore \frac{49}{56}=\frac{49\div 7}{56\div 7}=\frac{7}{8}$

(e) Factors of 54 = 1, 2, 3, 6, 9, 18, 27, 54

Factors of 81 = 1, 3, 9, 27, 81

HCF = 27

$\therefore \frac{54}{81}=\frac{54\div 27}{81\div 27}=\frac{2}{3}$

(f) Factors of 38 = 1, 2, 19, 38

Factors of 57 = 1, 3, 19, 57

HCF = 19

$\therefore \frac{38}{57}=\frac{38\div 19}{57\div 19}=\frac{2}{3}$

(g) Factors of 42 = 1, 2, 3, 6, 7, 14, 21, 42

Factors of 66 = 1, 2, 3, 6, 11, 22, 33, 66

HCF = 6

$\therefore \frac{42}{66}=\frac{42\div 6}{66\div 6}=\frac{7}{11}$

(h) Factors of 144 = 1, 2, 3, 4, 6, 8, 12, 16, 18, 24, 36, 72, 144

Factors of 180 = 1, 2, 3, 4, 5, 6, 9, 10, 12, 15, 18, 20, 30, 36, 60, 90, 180

HCF = 36

$\therefore \frac{144}{180}=\frac{144\div 36}{180\div 30}=\frac{4}{5}$

Alternate method:

$\frac{144}{180}=\frac{1\times 2\times 2\times 2\times 2\times 3\times 3}{1\times 2\times 2\times 3\times 3\times 5}=\frac{1\times 2\times 2}{1\times 5}=\frac{4}{5}$

Test Prep 11.3

Sol.1. (a) Improper (b) proper
(c) unit (d) mixed

Sol.2. (a) Like fractions (b) Unlike fractions
(c) Unlike fractions (d) Like fractions

Sol.3. (a) Proper fraction (b) Proper fraction
(c) Unit fraction (d) Unit fraction
(e) Mixed fraction (f) Improper fraction
(g) Improper fraction (h) proper fraction
(i) Unit fraction (j) Unit fraction
(k) Proper fraction (l) Improper fraction
(m) Mixed fraction (n) Improper fraction
(o) Mixed fraction (p) Improper fraction

Test Prep 11.4

Sol.1. (a) We have, $4\frac{1}{8}=\frac{4\times 8+1}{8}=\frac{32+1}{8}=\frac{33}{8}$

(b) We have, $3\frac{7}{9}=\frac{3\times 9+7}{9}=\frac{27+7}{9}=\frac{34}{9}$

(c) We have, $4\frac{4}{9}=\frac{4\times 9+4}{9}=\frac{36+4}{9}=\frac{40}{9}$

(d) We have, $6\frac{4}{5}=\frac{6\times 5+4}{5}=\frac{30+4}{5}=\frac{34}{5}$

(e) We have, $8\frac{7}{9}=\frac{8\times 9+7}{9}=\frac{72+7}{9}=\frac{79}{9}$

(f) We have, $5\frac{13}{17}=\frac{5\times 17+13}{17}=\frac{85+13}{17}=\frac{98}{17}$

(g) We have, $5\frac{1}{15}=\frac{5\times 15+1}{15}=\frac{75+1}{15}=\frac{76}{15}$

(h) We have, $10\frac{2}{3}=\frac{10\times 3+2}{3}=\frac{30+2}{3}=\frac{32}{3}$

Sol.2. (a) Dividing 15 by 7.

$$\begin{array}{r} 2 \\ 7\overline{)15} \\ -14 \\ \hline 1 \end{array}$$

quotient = 2, remainder = 1

$\therefore \frac{15}{7}=2+\frac{1}{7}=2\frac{1}{7}$

(b) Dividing 19 by 5.

$$5\overline{)19}\ 3,\quad -15,\quad 4$$

$\therefore \frac{19}{5} = 3 + \frac{4}{5} = 3\frac{4}{5}$

(c) Dividing 31 by 4.

$$4\overline{)31}\ 7,\quad -28,\quad 3$$

$\therefore \frac{31}{4} = 7\frac{3}{4}$

(d) Dividing 38 by 9.

$$9\overline{)38}\ 4,\quad -36,\quad 2$$

$\therefore \frac{38}{9} = 4\frac{2}{9}$

(e) Dividing 20 by 8.

$$8\overline{)20}\ 2,\quad -16,\quad 4$$

$\therefore \frac{20}{8} = 2\frac{4}{8} = 2\frac{1}{2}$

(f) Dividing 49 by 2.

$$2\overline{)49}\ 24,\quad -4,\quad 9,\quad -8,\quad 1$$

$\therefore \frac{49}{2} = 24\frac{1}{2}$

(g) Dividing 39 by 3.

$$3\overline{)31}\ 13,\quad -3,\quad 9,\quad -9,\quad 0$$

$\therefore \frac{39}{3} = 13$

(h) Dividing 127 by 15.

$$15\overline{)127}\ 8,\quad -120,\quad 7$$

$\therefore \frac{127}{15} = 8\frac{7}{15}$

Test Prep 11.5

Sol.1. Here, numerators are same. The fraction with the smaller denominators is greater.

(a) $\frac{5}{10} > \frac{5}{12}$ (b) $\frac{4}{8} > \frac{4}{10}$

(c) $\frac{9}{12} > \frac{9}{24}$ (d) $\frac{8}{14} > \frac{8}{20}$

Sol.2. Here denominators are same. The fraction with the greater numerators is greater.

(a) $\frac{2}{16} < \frac{3}{16}$ (b) $\frac{8}{15} < \frac{9}{15}$

(c) $\frac{3}{9} < \frac{4}{9}$ (d) $\frac{12}{18} < \frac{13}{18}$

Sol.3. (a) Here, denominators are same:

Since, $10 > 8 > 1$

So, $\frac{10}{5} > \frac{8}{5} > \frac{1}{5}$

(b) Here, denominators are same:

Since, $6 > 4 > 2$

So, $\frac{6}{9} > \frac{4}{9} > \frac{2}{9}$

(c) Here, denominators are same:

Since, $8 > 3 > 1$

So, $\frac{8}{10} > \frac{3}{10} > \frac{1}{10}$

(d) Here, denominators are same:

Since, $7 > 5 > 3$

So, $\frac{7}{12} > \frac{5}{12} > \frac{3}{12}$

Sol.4. (a) Here, numerators are same:

Since, $9 > 6 > 4$

But $\frac{8}{9} < \frac{8}{6} < \frac{8}{4}$

(b) Here, numerators are same:

Since, $21 > 13 > 10$

But $\frac{9}{21} < \frac{9}{13} < \frac{9}{10}$

(c) Here, numerators are same:

Since, $11 > 8 > 6$

But $\frac{1}{11} < \frac{1}{8} < \frac{1}{6}$

(d) Here, numerators are same:

Since, $10 > 8 > 7$

But $\frac{12}{10} < \frac{12}{8} < \frac{12}{7}$

Sol.5. (a) LCM of 5 and $2 = 5 \times 2 = 10$

$\frac{3}{5} = \frac{3\times2}{5\times2} = \frac{6}{10}$

and $\frac{1}{2} = \frac{1\times5}{2\times5} = \frac{5}{10}$

5	5, 2
2	1, 2
	1, 1

Since, $\frac{6}{10} > \frac{5}{10}$, So $\frac{3}{5} \boxed{\geq} \frac{1}{2}$

(b) LCM of 9 and $7 = 9 \times 7 = 63$

$\frac{1}{9} = \frac{1\times7}{9\times7} = \frac{7}{63}$

and $\frac{2}{7} = \frac{2\times9}{2\times9} = \frac{18}{63}$

Since, $\frac{7}{63} < \frac{18}{63}$, So $\frac{1}{9} \boxed{\leq} \frac{2}{7}$.

(c) LCM of 21 and $20 = 21 \times 20 = 420$

$\frac{8}{21} = \frac{8\times20}{21\times20} = \frac{160}{420}$

and $\frac{7}{20} = \frac{7\times21}{20\times21} = \frac{147}{420}$

Since, $\frac{160}{420} > \frac{147}{420}$, So $\frac{8}{21} \boxed{\geq} \frac{7}{20}$.

(d) LCM of 3 and $12 = 3 \times 2 \times 2 = 12$

$\frac{2}{3} = \frac{2\times4}{3\times4} = \frac{8}{12}$

and $\frac{3}{12} = \frac{3\times1}{12\times1} = \frac{3}{12}$

3	3, 12
2	1, 4
2	1, 2
	1, 1

Since, $\frac{8}{12} > \frac{3}{12}$, So $\frac{2}{3} \boxed{\geq} \frac{3}{12}$.

(e) LCM of 12 and $6 = 2 \times 2 \times 3 = 12$

$\frac{1}{12} = \frac{1\times1}{12\times1} = \frac{1}{12}$

and $\frac{1}{6} = \frac{1\times2}{6\times2} = \frac{2}{12}$

2	12, 6
2	6, 3
3	3, 1
	1, 1

Since, $\frac{1}{12} < \frac{2}{12}$, So $\frac{1}{12} \boxed{\leq} \frac{1}{6}$.

(f) LCM of 9 and $23 = 9 \times 23 = 207$

$\frac{5}{9} = \frac{5\times23}{9\times23} = \frac{115}{207}$ and $\frac{20}{23} = \frac{20\times9}{23\times9} = \frac{180}{207}$

Since, $\frac{115}{207} < \frac{180}{207}$, So $\frac{5}{9} \boxed{\leq} \frac{20}{23}$.

Sol.6. (a) LCM of 3, 5 and $8 = 3 \times 5 \times 8 = 120$

$\frac{2}{3} = \frac{2\times5\times8}{3\times5\times8} = \frac{80}{120}$

$\frac{4}{5} = \frac{4\times3\times8}{5\times3\times8} = \frac{96}{120}$

$\frac{3}{8} = \frac{3\times3\times5}{8\times3\times5} = \frac{45}{120}$

Since, $\frac{45}{120} < \frac{80}{120} < \frac{96}{120}$, So $\frac{3}{8} < \frac{2}{3} < \frac{4}{5}$.

Thus, the ascending order is $\frac{3}{8}, \frac{2}{3}, \frac{4}{5}$.

(b) LCM of 9 and $7 = 9 \times 7 = 63$

$\frac{1}{9} = \frac{1\times7}{9\times7} = \frac{7}{63}$

$\frac{3}{7} = \frac{3\times9}{7\times9} = \frac{27}{63}$

$\frac{2}{7} = \frac{2\times9}{7\times9} = \frac{18}{63}$

Since, $\frac{7}{63} < \frac{18}{63} < \frac{27}{63}$, So $\frac{1}{9} < \frac{2}{7} < \frac{3}{7}$.

Thus, ascending order is $\frac{1}{9}, \frac{2}{7}, \frac{3}{7}$.

(c) LCM of 4, 6 and $12 = 2 \times 2 \times 3 = 12$

$\frac{1}{4} = \frac{1\times3}{4\times3} = \frac{3}{12}$

$\frac{3}{6} = \frac{3\times2}{6\times2} = \frac{6}{12}$

2	4, 6, 12
2	2, 3, 6
3	1, 3, 3
	1, 1, 1

$$\frac{5}{12}=\frac{5\times1}{12\times1}=\frac{5}{12}$$

Since, $\frac{3}{12}<\frac{5}{12}<\frac{6}{12}$, So $\frac{1}{4}<\frac{5}{12}<\frac{3}{6}$.

Thus, ascending order is $\frac{1}{4},\frac{5}{12},\frac{3}{6}$.

Sol.7. (a) LCM of 4, 3 and 5 $=4\times3\times5=60$

$$\frac{1}{4}=\frac{1\times3\times5}{4\times3\times5}=\frac{15}{60}$$

$$\frac{2}{3}=\frac{2\times4\times5}{3\times4\times5}=\frac{40}{60}$$

$$\frac{3}{5}=\frac{3\times3\times4}{5\times3\times4}=\frac{36}{60}$$

Since, $\frac{40}{60}>\frac{36}{60}>\frac{15}{60}$, So $\frac{2}{3}>\frac{3}{5}>\frac{1}{4}$.

Thus, descending order is $\frac{2}{3},\frac{3}{5},\frac{1}{4}$.

(b) LCM of 6, 36 and 10 $=2\times2\times3\times3\times5=180$

$$\frac{3}{6}=\frac{3\times2\times3\times5}{6\times2\times3\times5}=\frac{90}{180}$$

$$\frac{9}{36}=\frac{9\times5}{36\times5}=\frac{45}{180}$$

$$\frac{1}{10}=\frac{1\times18}{10\times18}=\frac{18}{180}$$

2	6, 36, 10
2	3, 18, 5
3	3, 9, 5
3	1, 3, 5
5	1, 1, 5
	1, 1, 1

Since, $\frac{90}{180}>\frac{45}{180}>\frac{18}{180}$, So $\frac{3}{6}>\frac{9}{36}>\frac{1}{10}$.

Thus, descending order is $\frac{3}{6},\frac{9}{36},\frac{1}{10}$.

(c) LCM of 6, 8 and 14 $=2\times2\times3\times2\times7=168$

$$\frac{5}{6}=\frac{5\times2\times2\times7}{6\times2\times2\times7}=\frac{140}{168}$$

$$\frac{7}{8}=\frac{7\times3\times7}{8\times3\times7}=\frac{147}{168}$$

$$\frac{13}{14}=\frac{13\times2\times2\times3}{14\times2\times2\times3}=\frac{156}{168}$$

2	6, 8, 14
2	3, 4, 7
2	3, 2, 7
3	3, 1, 7
7	1, 1, 7
	1, 1, 1

Since, $\frac{156}{168}>\frac{147}{168}>\frac{140}{168}$, So $\frac{13}{14}>\frac{7}{8}>\frac{5}{6}$.

Thus, descending order is $\frac{13}{14},\frac{7}{8},\frac{5}{6}$.

Test Prep 11.6

Sol.1. (a) $\frac{3}{6}+\frac{2}{6}=\frac{3+2}{6}=\frac{5}{6}$

(b) $\frac{8}{9}+\frac{4}{9}=\frac{8+4}{9}=\frac{12}{9}$

$$=\frac{2\times2\times3}{3\times3}=\frac{2\times2}{3}=\frac{4}{3}$$

(c) $\frac{6}{12}+\frac{3}{12}=\frac{6+3}{12}=\frac{9}{12}$

$$=\frac{3\times3}{2\times2\times3}=\frac{3}{2\times2}=\frac{3}{4}$$

(d) $\frac{5}{10}+\frac{2}{10}+\frac{2}{10}$

$$=\frac{5+2+2}{10}=\frac{9}{10}$$

(e) $\frac{1}{16}+\frac{3}{16}+\frac{5}{16}=\frac{1+3+5}{16}=\frac{9}{16}$

(f) $\frac{4}{27}+\frac{5}{27}+\frac{2}{27}=\frac{4+5+2}{27}=\frac{11}{27}$

Sol.2. (a) $2\frac{1}{7}+3\frac{1}{7}=\frac{15}{7}+\frac{22}{7}$

$$=\frac{15+22}{7}=\frac{37}{7}=5\frac{2}{7}$$

(b) $6\frac{1}{5}+4\frac{1}{5}=\frac{31}{5}+\frac{21}{5}$

$$=\frac{31+21}{5}=\frac{52}{5}=10\frac{2}{5}$$

(c) $2\frac{1}{5}+3\frac{2}{5}=\frac{11}{5}+\frac{17}{5}$

$$=\frac{11+17}{5}=\frac{28}{5}=5\frac{3}{5}$$

(d) $9\frac{3}{8}+2\frac{5}{8}+4=\frac{75}{8}+\frac{21}{8}+\frac{4\times8}{8}$

$=\frac{75+21+32}{8}=\frac{128}{8}=16$

(e) $2\frac{1}{7}+1\frac{1}{7}+3\frac{1}{7}=\frac{15}{7}+\frac{8}{7}+\frac{22}{7}$

$=\frac{15+8+22}{7}=\frac{45}{7}=6\frac{3}{7}$

(f) $8+7\frac{1}{4}+1\frac{3}{4}=8+\frac{29}{4}+\frac{7}{4}$

$=\frac{8\times4}{4}+\frac{29}{4}+\frac{7}{4}=\frac{32+29+7}{4}=\frac{68}{4}=17$

Test Prep 11.7

Sol.1. (a) $\frac{8}{13}-\frac{6}{13}=\frac{8-6}{13}=\frac{2}{13}$

(b) $\frac{7}{9}-\frac{4}{9}=\frac{7-4}{9}=\frac{3}{9}=\frac{1\times3}{3\times3}=\frac{1}{3}$

(c) $\frac{5}{18}-\frac{4}{18}=\frac{5-4}{18}=\frac{1}{18}$

(d) $\frac{4}{11}-\frac{1}{11}=\frac{4-1}{11}=\frac{3}{11}$

(e) $\frac{9}{17}-\frac{7}{17}=\frac{9-7}{17}=\frac{2}{17}$

(f) $\frac{11}{20}-\frac{3}{20}=\frac{11-3}{20}=\frac{8}{20}=\frac{2\times2\times2}{2\times2\times5}=\frac{2}{5}$

Sol.2. (a) $6\frac{3}{4}-4\frac{1}{4}=\frac{27}{4}-\frac{17}{4}=\frac{27-17}{4}$

$=\frac{10}{4}=\frac{2\times5}{2\times2}=\frac{5}{2}$

(b) $9\frac{1}{7}-6\frac{1}{7}=\frac{64}{7}-\frac{43}{7}=\frac{64-43}{7}$

$=\frac{21}{7}=\frac{3\times7}{1\times7}=3$

(c) $8\frac{7}{12}-5\frac{1}{12}=\frac{103}{12}-\frac{61}{12}=\frac{103-61}{12}$

$=\frac{42}{12}=\frac{2\times3\times7}{2\times2\times3}=\frac{7}{2}=3\frac{1}{2}$

(d) $5\frac{1}{13}-2\frac{1}{13}=\frac{66}{13}-\frac{27}{13}=\frac{66-27}{13}$

$=\frac{39}{13}=\frac{3\times13}{1\times13}=3$

(e) $13\frac{3}{17}-11\frac{2}{17}=\frac{13\times17+3}{17}-\frac{11\times17+2}{17}$

$=\frac{221+3}{17}-\frac{187+2}{17}=\frac{224}{17}-\frac{189}{17}$

$=\frac{224-189}{17}=\frac{35}{17}=2\frac{1}{17}$

(f) $9\frac{5}{36}-7\frac{1}{36}=\frac{9\times36+5}{36}-\frac{7\times36+1}{36}$

$=\frac{324+5}{36}-\frac{252+1}{36}=\frac{329}{36}-\frac{253}{36}$

$=\frac{76}{36}=\frac{2\times2\times19}{2\times2\times3\times3}=\frac{19}{3\times3}=\frac{19}{9}=2\frac{1}{9}$

Test Prep 11.8

Sol.1. Total hours $=7\frac{3}{8}+6\frac{5}{8}+9\frac{1}{8}$

$=\frac{59}{8}+\frac{53}{8}+\frac{73}{8}=\frac{59+53+73}{8}$

$=\frac{185}{8}=23\frac{1}{8}$ hours.

Sol.2. Total capacity of both containers

$=\left(13\frac{1}{4}+15\frac{1}{4}\right)$ litres

$=\left(\frac{53}{4}+\frac{61}{4}\right)$ litres

$=\left(\frac{53+61}{4}\right)$ litres $=\frac{114}{4}$ litres

$=\frac{57}{2\text{litres}}=28\frac{1}{2}$ litres

Sol.3. Total rice $= \frac{3}{4}$ kg

Rice cooked $= \frac{1}{4}$ kg

Rice left $= \left(\frac{3}{4} - \frac{1}{4}\right)$ kg $= \left(\frac{3-1}{4}\right)$ kg

$= \frac{2}{4}$ kg $= \frac{1}{2}$ kg

Sol.4. Cake eaten by Abhijit $= \frac{1}{4}$

Cake eaten by Sumit $= \frac{3}{4}$

Here, $\frac{3}{4} > \frac{1}{4}$.

Difference $= \frac{3}{4} - \frac{1}{4} = \frac{3-1}{4} = \frac{2}{4} = \frac{1}{2}$

Thus, Sumit ate $\frac{1}{2}$ more cake.

Sol.5. Total ribbon $= 10\frac{3}{4}$ m

Ribbon cut $= 8\frac{1}{4}$ m

Ribbon left $= \left(10\frac{3}{4} - 8\frac{1}{4}\right)$ m $= \frac{43}{4} - \frac{33}{4} = \frac{10}{4}$

$= \frac{5}{2} = 2\frac{1}{2}$ m

Sol.6. Jaya jumped $= 3\frac{1}{4}$ m $= \frac{13}{4}$ m

Sita jumped $= 4\frac{1}{4}$ m $= \frac{17}{4}$ m

Here, $\frac{17}{4} > \frac{13}{4}$

Difference $= \left(\frac{17}{4} - \frac{13}{4}\right)$ m $= \frac{17-13}{4}$ m $= \frac{4}{4}$ m

$= 1$ m

Thus, Sita jumped 1 m farther.

Sol.7. Total distance $= 33\frac{3}{8}$ km $= \frac{267}{8}$ km

Distance travelled by bicycle and scooter

$= \left(16\frac{1}{8} + 14\frac{3}{8}\right)$ km $= \left(\frac{129}{8} + \frac{115}{8}\right)$ km

$= \left(\frac{129+115}{8}\right)$ km $= \frac{244}{8}$ km

Distance travelled on foot $= \left(\frac{267}{8} - \frac{244}{8}\right)$ km

$= \left(\frac{267-244}{8}\right)$ km

$= \frac{23}{8}$ km $= 2\frac{7}{8}$ km

Maths Skills

Sol.1. Here, $\frac{6}{7} = \frac{6\times2}{7\times2} = \frac{6\times3}{7\times3} = \frac{6\times4}{7\times4} = \frac{6\times5}{7\times5}$

$= \frac{12}{14} = \frac{18}{21} = \frac{24}{28} = \frac{30}{35}$

Thus, four fractions equivalent to $\frac{6}{7}$ are $\frac{12}{14}, \frac{18}{21}, \frac{24}{28}$ and $\frac{30}{35}$.

Sol.2. We have $\frac{2}{7} \times \frac{x}{21}$

$x \times 7 = 2 \times 21 \qquad x = \frac{42}{7} = 6$

So, $\frac{2}{7} = \frac{\boxed{6}}{21}$

Sol.3. $2\frac{11}{12} = \frac{2\times12+11}{12} = \frac{24+11}{12} = \frac{35}{12}$

Sol.4. Dividing 51 by 4, we have

$$\begin{array}{r} 12 \\ 4\overline{)51} \\ -4 \\ \hline 11 \\ -8 \\ \hline 3 \end{array}$$

So, $\frac{51}{4} = 12\frac{3}{4}$

Sol.5. $\frac{2}{5} \textcircled{>} \frac{2}{9}$

Sol.6. Here, denominators are same.

Since, $1 < 2 < 5 < 7$

So, $\frac{1}{3} < \frac{2}{3} < \frac{5}{3} < \frac{7}{3}$

Thus, descending order is $\frac{1}{3}, \frac{2}{3}, \frac{5}{3}, \frac{7}{3}$.

Sol.7. Here, denominators are same.

Since, $7 > 5 > 3 > 2$

So, $\frac{7}{8} > \frac{5}{8} > \frac{3}{8} > \frac{2}{8}$

Thus, descending order is $\frac{7}{8}, \frac{5}{8}, \frac{3}{8}, \frac{2}{8}$.

Sol.8. Factors of $50 = 1, 2, 5, 10, 25, 50$

Factors of $75 = 1, 3, 5, 15, 25, 75$

HCF $= 25$

Dividing the numerator and denominator by HCF.

$$\frac{50}{75} = \frac{50 \div 25}{75 \div 25} = \frac{2}{3}$$

Factors of $80 = 1, 2, 4, 5, 8, 10, 16, 20, 40, 80$

Factors of $100 = 1, 2, 4, 5, 10, 20, 25, 50, 100$

HCF $= 20$

Dividing numerator and denominator by HCF.

$$\frac{80}{100} = \frac{80 \div 20}{100 \div 20} = \frac{4}{5}$$

Sol.9. (a) $2\frac{3}{5} + 1\frac{2}{5} = \frac{13}{5} + \frac{7}{5} = \frac{13+7}{5} = \frac{20}{5} = 4$

(b) $6\frac{7}{9} - 2\frac{5}{9} = \frac{61}{9} - \frac{23}{9} = \frac{61-23}{9} = \frac{38}{9} = 4\frac{2}{9}$

(c) $8\frac{1}{15} - 7\frac{2}{15} = \frac{121}{15} - \frac{107}{15} = \frac{121-107}{15} = \frac{14}{15}$

Sol.10. Novel read in the morning $= \frac{3}{7}$

Novel read in the evening $= \frac{2}{7}$

Total $= \frac{3}{7} + \frac{2}{7} = \frac{3+2}{7} = \frac{5}{7}$

Sol.11. Total journey $= \frac{2}{11} + \frac{4}{11} + \frac{3}{11}$

$$= \frac{2+4+3}{11} = \frac{9}{11}$$

Sol.12. Total milk $= 2$ litres

Milk drank $= 1\frac{1}{4}$ litres $= \frac{5}{4}$ litres

Milk left $= \left(2 - \frac{5}{4}\right)$ litres $= \frac{3}{4}$ litres

HOTS

Sol.1. Sum of $6\frac{2}{15}$ and $5\frac{1}{15} = 6\frac{2}{15} + 5\frac{1}{15}$

$$= \frac{92}{15} + \frac{76}{15} = \frac{92+76}{15} = \frac{168}{15}$$

Sum of $7\frac{1}{15}$ and $10\frac{1}{15} = 7\frac{1}{15} + 10\frac{1}{15}$

$$= \frac{106}{15} + \frac{151}{15} = \frac{106+151}{15} = \frac{257}{15}$$

Difference $\left(7\frac{1}{15} + 10\frac{1}{5}\right) - \left(6\frac{2}{15} + 5\frac{1}{15}\right)$

Sum $= \frac{257}{15} - \frac{168}{15} = \frac{257-168}{15} = \frac{89}{15} = 5\frac{14}{15}$

Sol.2. Difference $= \frac{19}{34} - \frac{8}{34} = \frac{19-8}{34} = \frac{11}{34}$

Sum $= 4\frac{2}{34} + \frac{11}{34} = \frac{136+2}{34} + \frac{11}{34} = \frac{138+11}{34}$

$$= \frac{149}{34} = 4\frac{13}{34}$$

Sol.3. Sum $= \left(7\frac{1}{5} - 5\frac{2}{5}\right) + \left(3\frac{3}{5} - 2\frac{3}{5}\right)$

$$= \left(\frac{36}{5} - \frac{27}{5}\right) + \left(\frac{18}{5} - \frac{13}{5}\right)$$

$$= \frac{9}{5} + \frac{5}{5} = \frac{9+5}{5} = \frac{14}{5} = 2\frac{4}{5}$$

Maths Olympiad

Sol.1. (a) Proper

Sol.2. (d) all of these

Sol.3. Total letters = 9

No. of vowels = 4

Fraction = $\frac{4}{9}$ $\therefore$ (a)

Sol.4. $\frac{2}{3}=\frac{2\times2}{3\times2}=\frac{4}{6}$

$\frac{2}{3}=\frac{2\times3}{3\times3}=\frac{6}{9}$

$\frac{2}{3}=\frac{2\times4}{3\times4}=\frac{8}{12}$

$\frac{2}{3}=\frac{2\times5}{3\times5}=\frac{10}{15}$

$\frac{2}{3}=\frac{2\times6}{3\times6}=\frac{12}{18}$

So, (d)

Sol.5. (b) $\frac{23}{21}$

Sol.6. To get numerator as 20, we multiply the numerator and denominator of $\frac{4}{7}$ by 5.

$\frac{4}{7}=\frac{5\times4}{5\times7}=\frac{20}{35}$

$\therefore$ (d)

Sol.7. (d) $\frac{18}{81}=\frac{18\div9}{81\div9}=\frac{2}{9}$

Sol.8. Total balls = 53

No. of red balls = 17

No. of white balls = 53 – 17 = 36

Fraction = $\frac{36}{53}$

$\therefore$ (c)

Chapter-12
The Metric System of Measurement

Test Prep 12.1

Sol.1. (a) 85 mm = $\frac{85}{10}$ cm = 8.5 cm

(b) 64 mm = $\frac{64}{10}$ cm = 6.4 cm

(c) 70 mm = $\frac{70}{10}$ cm = 7 cm

(d) 9 m = 9 × 100 cm = 900 cm

(e) 17 m = 17 × 100 cm = 1700 cm

(f) 84 m = 84 × 100 cm = 8400 cm

(g) 5 m 40 cm = 5 × 100 cm + 40 cm
= 500 cm + 40 cm = 540 cm

(h) 63 m 75 cm = 63 × 100 cm + 75 cm
= 6300 cm + 75 cm = 6375 cm

(i) 40 m 5 cm = 40 × 100 cm + 5 cm
= 4000 cm + 5 cm = 4005 cm

Sol.2. (a) 370 cm = $\frac{370}{100}$ m = 3.7 m

(b) 520 cm = $\frac{520}{100}$ m = 5.20 m

(c) 3560 cm = $\frac{3560}{100}$ m = 35.60 m

(d) 23 km 25 m = 23 × 1000 m + 25 m
= 23000 m + 25 m = 23025 m

(e) 80 km 5 m = 80 × 1000 m + 5 m
= 80000 m + 5 m = 80005 m

(f) 10 km 165 m = 10 × 1000m + 165 m
= 10000 m + 165 m = 10165 m

(g) 4 km 8 hm 5 dam 6 m = 4 × 1000 m + 8 × 100 m + 5 × 10 m + 6 m = 4856 m

(h) 12 km 6 hm 8 dam 5 m = 12 × 1000 m + 6 × 100m + 8 × 10 m + 5 m = 12000 m + 600 m + 80 m + 5 m = 12685 m

Sol.3. (a) 7 cm = 7 × 10 mm = 70 mm

(b) 23 cm = 23 × 10 mm = 230 mm

(c) 65 cm = 65 × 10 mm = 650 mm

Sol.4. (a) 4 kg = 4 × 1000 grams = 4000 grams

(b) 23 kg = 23 × 1000 grams = 23000 grams

(c) 108 kg = 108 × 1000 grams = 108000 grams

(b) 8 kg 125 g = 8 × 1000 g + 125 g = 8125 g

(e) 12 kg 30 g = 12 × 1000 g + 30 g = 12000 g + 30 g
= 12030 g

(f) 20 kg 5 g = 20 × 1000 g + 5 g = 20000 g + 5g
= 20005 g

(g) 5 kg 4 hg 2 dag 3g = 5 × 1000 g + 4 × 100g + 3 × 10 g + 3g
= 5000 g + 400 g + 30g + 3g = 5433 g

(h) 20 kg 5 hg 8 dag 6 g = 20 × 1000g + 5 × 100 g + 8 × 10 g + 6g
= 20000 g + 500 g + 80 g + 6 g = 20586 g

Sol.5. (a) 8 kL = 8 × 1000 L = 8000 L
(b) 50 kL = 50 × 1000 L = 50000 L
(c) 132 kL = 132 × 1000 L = 132000 L
(d) 2 kL 350 L = 2 × 1000 L + 350 L
= 2000 L + 350 L = 2350 L
(e) 83 kL 60 L = 83 × 1000 L + 60 L
= 83000 L + 60 L = 83060 L
(f) 102 kL 8 L = 102 × 1000 L + 8 L
= 102000 L + 8 L = 102008 L
(h) 12 kL 8hl 6del 9 L
= 12 × 1000 L + 8 × 100 L + 6 × 10 L + 9 L
= 12000 L + 800 L + 60 L + 9 L = 12869 L
(g) 3 kL 6hl 4del 5 L
= 3 × 1000 L + 6 × 100 L + 4 × 10 L + 5 L
= 3000 L + 600 L + 40 L + 5 L = 3645 L
(h) 12 kL 8hl 6del 9L
= 12 × 1000 L + 8 × 100 L + 6 × 10 L + 9 L
= 12000 L + 800 L + 60 L + 9 L = 12869 L

Sol.6. (a) 6L 250 mL = 6 × 1000 mL + 250 mL
= 6000 mL + 250 mL
= 6250 mL
(b) 15 L 140 mL = 15 × 1000 mL + 140 mL
= 15000 mL + 140 mL
= 15140 mL
(c) 43 L 3 mL = 43 × 1000 mL + 3 mL
= 43000 mL + 3 mL = 43003 mL

Test Prep 12.2

Sol.1. (a)

Kg	g
34	105
+ 4	864
38	969

(b)

Km	m
45	185
+ 5	764
50	949

(c)

L	mL
8	465
+ 3	134
11	599

Sol.2. (a)

Kg	g
46	250
– 8	540
37	710

(b)

Km	m
43	500
– 28	230
15	270

(c)

L	mL
46	300
– 40	500
5	800

Sol.3. (a)

Kg	g
45	456
+23	608
69	064

(b)

Km	m	cm
123	034	103
+ 89	405	222
212	439	325

(c)

Km	m
13	670
45	908
+ 29	770
89	348

(d)

KL	L
45	043
18	390
+ 55	900
119	333

Sol.4. (a)

m	cm
678	10
– 537	63
140	47

(b)

Km	m
42	900
– 31	706
11	194

(c)

L	mL
42	789
– 13	230
29	559

(d)

Kg	g	mg
76	104	66
–52	300	45
23	804	21

Sol.5.

	m	cm
Length of one rope	442	52
Lenght of another rope = +	354	84
Total length of ropes =	797	36

Sol.6.

	km	cm
Distance Travelled by train =	75	620
Distance Travelled by bus = +	24	725
Total Distance =	100	345

Sol.7.

	L	mL
	46	450
	35	500
	+56	706
Total milk =	138	656

Sol.8.

	m	cm
Total Distance =	100	00
Distance Covered =	– 79	50
Distance left =	20	50

Sol.9.

	m	cm
Total Length =	32	00
Length now =	– 21	05
Length burnt out =	10	95

Sol.10.

	m	cm
Length of rope =	345	66
Rope used =	– 234	15
Rope left =	111	51

Maths Skills

Sol.1. (a)

m	cm
15	56
22	85
+ 13	00
51	41

(b)

g	mg
100	530
250	002
+	053
350	585

(c)

L	mL
161	000
120	000
000	131
+ 260	533
541	664

Sol. 2. (a)

Km	hm	dam	m
18	2	0	3
– 14	8	4	3
3	3	6	3

(b)

g	dg	cg
40	0	0
– 12	4	5
27	5	5

(c)

KL	mL
58	600
–32	117
26	483

Sol.3. Since, 100g + 100g + 100g + 100g = 400g
Thus, 4 weights of 100g.

Sol.4. Sugar left in the bag = 5kg – 2kg = 3kg

Sol.5. Since, 10L + 10L + 10L + 10L + 10L + 10L + 10L
= 70 L
Thus, 7 buckets are required.

Sol.6. Total milk the milkmen delivered = 12 L + 17 L + 28 L + 13 L = 70L

Sol.7.

	m	mL
Oil in drum =	58	00
Oil sold = –	24	05
Oil left =	33	95

Sol.8.

	Km	m
Distance covered on foot =	12	160
Distance covered by bus =	25	610
Distance covered by car = +	48	000
Total distance covered =	85	770

Maths Olympiad

Sol.1. (b) m

Sol.2. (d) g

Sol.3. (c) L

Sol.4. (d) multiply by 1000

Sol.5. 8 m 9 cm = 8 × 100 cm + 9 cm
= (800 + 9) cm = 809 cm
∴ (a)

Sol.6.

cm	mm
8	2
+ 2	8
11	0

∴ (d) 11 cm

Sol.7. 5 dL 5 mL = 5 × 100 mL + 5 mL
= 500 mL + 5 mL
5 dL 5 mL = 505 mL
∴ (b) 505 mL

Sol.8. 6 cm 4 mm = 6 × 10 mm + 4 mm
= 60 mm + 4 mm
= 64 mm

Chapter-13
Time

Test Prep 13.1

Sol.1. (a) 6 : 16; 16 minutes past 6
(b) 9 : 32; 32 minutes past 9
(c) 2 : 56; 56 minutes past 2

Sol.2. (a)  (b) 

(c) 

Test Prep 13.2

Sol.1 (a) 5 : 48 : 22
(b) 7 : 16 : 36
(c) 9 : 26 : 43

Sol.2. (a)  (b) 

(c) 

Test Prep 13.3

Sol.1. (a) 1 day = 24 hours
5 days = 5 × 24 hours
= 120 hours
(b) 1 day = 24 hours
7 days = 7 × 24 hours
= 168 hours
(c) 12 day = 12 × 24 hours
= 288 hours

(d) 15 day 3 hours
= 15 × 24 hours + 3 hours
= 360 hours + 3 hours
= 363 hours
(e) 16 day 8 hours
= 16 × 24 hours + 8 hours
= 384 hours + 8 hours
= 392 hours
(f) 20 day 9 hours
= 20 × 24 hours + 9 hours
= 480 hours + 9 hours
= 489 hours

Sol.2. (a)
$$\begin{array}{r} 3 \\ 24\overline{)75} \\ -72 \\ \hline 3 \end{array}$$

75 hours = (75 ÷ 24) days
= 3 days 3 hours

(b)
$$\begin{array}{r} 4 \\ 24\overline{)96} \\ -96 \\ \hline 0 \end{array}$$

96 hours = (96 ÷ 24) days
= 4 days

(c)
$$\begin{array}{r} 5 \\ 24\overline{)121} \\ -120 \\ \hline 1 \end{array}$$

121 hours = (121 ÷ 24) days
= 5 days 1 hour

(d)
$$\begin{array}{r} 6 \\ 24\overline{)156} \\ -144 \\ \hline 12 \end{array}$$

156 hours = (156 ÷ 24) days
= 6 days 12 hours

(e)
$$\begin{array}{r} 8 \\ 24\overline{)200} \\ -192 \\ \hline 8 \end{array}$$

200 hours = 8 days 8 hours

(f)
$$\begin{array}{r} 15 \\ 24\overline{)360} \\ -24 \\ \hline 120 \\ -120 \\ \hline 0 \end{array}$$

360 hours = (360 ÷ 24) days
= 15 days

Sol.3. (a) 1 hour = 60 min
6 hours = 6 × 60 min
= 360 min
(b) 5 h 25 min
= 5 × 60 min + 25 min
= 300 min + 25 min
= 325 min
(c) 8 h = 8 × 60 min
= 480 min
(d) 20 h 10 min
= 20 × 60 min + 10 min
= 1200 min + 10 min
= 1210 min
(e) 8 h 4 min
= 8 × 60 min + 4 min
= 480 min + 4 min
= 484 min
(f) 12 h 16 min
= 12 × 60 min + 16 min
= 720 min + 16 min
= 736 min
(g) 32 h 50 min
= 32 × 60 min + 50 min
= 1920 min + 50 min
= 1970 min
(h) 46 h 15 min
= 46 × 60 min + 15 min
= 2760 min + 15 min
= 2775 min

Sol.4. (a)
$$\begin{array}{r} 1 \\ 60\overline{)63} \\ -60 \\ \hline 3 \end{array}$$

63 min = 1 h 3 min

(b)
$$\begin{array}{r} 2 \\ 60\overline{)176} \\ -120 \\ \hline 56 \end{array}$$

176 min = 2 h 56 min

(c) $60\overline{)195}$ (3), -180, 15

195 min = 3h 15min

(d) $60\overline{)700}$ (11), -60, 100, -60, 40

700 min = 11h 40 min

(f) $60\overline{)285}$ (4), -240, 45

285 min = 4h 45min

(g) $60\overline{)900}$ (15), -60, 300, -300, 0

900 min = 15h

(h) $60\overline{)470}$ (7), -420, 50

470 min = 7h 50 min

Sol.5. (a) 2 min 17 sec
= 2 × 60 sec + 17 sec
= 120 sec + 17 sec
= 137 sec

(b) 9 min 10 sec
= 9 × 60 sec + 10 sec
= 540 sec + 10 sec
= 550 sec

(c) 11 min 11 sec
= 11 × 60 sec + 11 sec
= 660 sec + 11 sec
= 671 sec

(d) 18 min 36 sec
= 18 × 60 sec + 36 sec
= 1080 sec + 36 sec
= 1116 sec

(e) 15 min 15 sec
= 15 × 60 sec + 15 sec
= 900 sec + 15 sec
= 915 sec

(f) 8 min 40 sec
= 8 × 60 sec + 40 sec
= 480 sec + 40 sec
= 520 sec

(g) 12 min 12 sec
= 12 × 60 sec + 12 sec
= 720 sec + 12 sec
= 732 sec

(h) 20 min 43 sec
= 20 × 60 sec + 43 sec
= 1200 sec + 43 sec
= 1243 sec

Sol.6. (a) $60\overline{)900}$ (15), -60, 300, -300, 0

900 sec = 15 min

(b) $60\overline{)185}$ (3), -180, 5

185 sec = 3min 5sec

(c) $60\overline{)400}$ (6), -360, 40

400 sec = 6 min 40 sec

(d) $60\overline{)235}$ (3), -180, 55

235 sec = 3 min 55 sec

(e) $60\overline{)80}$ (1), -60, 20

80 sec = 1min 20sec

(f) $60\overline{)750}$ (12), -60, 150, -120, 30

750 sec = 12min 30 sec

(g) $60\overline{)225}$ (3), -180, 45

225 sec = 3 min 45 sec

(h) $60\overline{)472}$ (7), -420, 52

472 sec = 7 min 52 sec

Test Prep 13.4

Sol.1. (a) 6 : 30 P.M.
= [(6 + 12) : 30] hours
= 1830 hours

(b) 1 : 25 A.M.
= 0125 hours

(c) 2 : 25 P.M.
= [(2 + 12) : 25] hours
= 1425 hours

(d) 2 : 38 A.M. = 0238 hours

(e) 11 : 50 A.M. = 1150 hours

(f) 12 : 30 P.M. = 1230 hours

(g) 12 : 55 A.M. = 0055 hours

(h) 4 : 25 P.M.
= [(4 + 12) : 25] hours
= 1625 hours

Sol.2. (a) 1045 hours = 10 : 45 A.M.
(b) 2328 hours = [(23 – 12): 28] P.M. = 11:28 P.M.
(c) 0632 hours = 6 : 32 A.M.
(d) 0155 hours = 1:55 A.M.
(e) 2120 hours = [(21–12) : 20] P.M. = 9 : 20 P.M.
(f) 0035 hours = 0 : 35 A.M.
(g) 1250 hours = 12 : 50 P.M.
(h) 1840 hours = [(18 – 12) : 40] P.M. = 6 : 40 P.M.

Test Prep 13.5

Sol.1. (a) hours minutes

$$\begin{array}{rr} 2 & 20 \\ +\ 3 & 15 \\ \hline 5 & 35 \end{array}$$

= 5 hours 35 minutes

(b) hours minutes

$$\begin{array}{rr} 1 & 45 \\ +\ 7 & 18 \\ \hline 8 & 63 \end{array}$$

= 8 hours + (1 h + 3 min)
= 9 hours 3 minutes

(c) hours minutes

$$\begin{array}{rr} 12 & 45 \\ +\ 15 & 55 \\ \hline 27 & 100 \end{array}$$

= 27 min + (1 min + 40 sec)
= 28 min + 40 sec = 28 min 40 sec

(d) hours minutes

$$\begin{array}{rr} 40 & 30 \\ +\ 30 & 40 \\ \hline 70 & 70 \end{array}$$

= 70 min + (1 min + 10 sec)
= 71 min + 10 sec = 71 min 10 sec

Sol.2. (a) hours minutes

$$\begin{array}{rr} 5 & 40 \\ -\ 3 & 15 \\ \hline 2 & 25 \end{array}$$

= 2 hours 25 minutes

(b) hours minutes

$$\begin{array}{rr} 9 & 10 \\ -\ 6 & 25 \\ \hline 2 & 45 \end{array}$$

= 2 hours 45 minutes

(c) minutes seconds

$$\begin{array}{rr} 55 & 50 \\ -\ 50 & 30 \\ \hline 5 & 20 \end{array}$$

= 5 minutes 20 seconds

(d) minutes seconds

$$\begin{array}{rr} 50 & 20 \\ -\ 40 & 45 \\ \hline 9 & 35 \end{array}$$

= 9 minutes 35 seconds

Sol.3. (a) 3 hours after 6 : 30 A.M. = [(6 + 3) : 30] A.M.
= 9 : 30 A.M.
(b) 10 hours after 1 : 00 A.M. = [(10 + 1) : 00] A.M.
= 11 : 00 A.M.
(c) 4 hourrs after 8 : 25 P.M. = [(4 + 8) : 25] P.M.
= 12 : 25 P.M.
= 00:25 A.M.
(d) 6 hours before 9:40 A.M. = [(9 – 6) : 40] A.M.
= 3 : 40 A.M.
(e) 5 hours after 2 : 30 P.M. = [(5 + 2) : 30] P.M.
= 7 : 30 P.M.
(f) 7 hous before 9 : 00 P.M. = [(9 – 7) : 00] P.M.
= 2 : 00 P.M.

Sol.4. Time duration = 10 : 10 A.M. to 11:55 A.M.
= (10 : 10 to 11 : 00) A.M. + (11:00 to 11:55) A.M.
= 50 min + 55 min
= 105 min = 60 min + 45 min = 1 hour 45 min

Sol.5. Time duration = 3:25 P.M. to 6:55 P.M.
= (3:25 to 4:00) P.M. + (4:00 to 6:00) P.m.
+ (6:00 to 6:55) P.M.
= 35 min + 2 hours + 55 min
= 2 hours + 90 min
= 2 hours + 1 hour + 30 min = 3 hours 30 min

Sol.6. Time after 2 hours 15 minutes
= 7:45 A.M. + 2 h 15 min
= 9:60 A.M. = 10:00 A.M.
Thus, at 10:00 A.M., I will be in my office.

Sol.7. Time taken to reach Haridwar = 2128 hours
– 1542 hours = 5 hours 46 minutes

Sol.8. Time duration = 9 A.M. to 6 P.M.
= 9 A.M. to 12:00 Noon + 12:00 Noon to 6 P.M.
= 3 hours + 6 hours = 9 hours

Test Prep 13.6

Sol.1. (a)

$$\begin{array}{r} 503 \\ 4\overline{)2012} \\ -20 \\ \hline 012 \\ -12 \\ \hline 0 \end{array}$$

Since, 2012 is completely divisible by 4, So 2012 is a leap year.

(b)

$$\begin{array}{r} 503 \\ 4\overline{)2015} \\ -20 \\ \hline 015 \\ -12 \\ \hline 3 \end{array}$$

Here, remainder = 3
Thus, 2015 is not a leap year.

(c)
$$\begin{array}{r} 505 \\ 4\overline{)2022} \\ -20 \\ \hline 022 \\ -20 \\ \hline 2 \end{array}$$

Here, remainder = 2

Thus, 2022 is not a leap year.

(d)
$$\begin{array}{r} 506 \\ 4\overline{)2024} \\ -20 \\ \hline 024 \\ -24 \\ \hline 0 \end{array}$$

Here, 2024 is completely divisible by 4, So 2024 is a leap year.

Sol.2. (a) Here, we want to find the no. of days between these two dates, So we exclude these two dates.

Days from 15th April to 30th April = 16
Days from 1st May to 31st May = 31
Days from 1st June to 30th June = 30
Days from 1st July to 13th July = + 13
Total days = 90

Thus, Number of days between 14th April to 14th July = 90

(b) Days from 23rd May to 31st May = 9
Days from 1st June to 30th June = 30
Days from 1st July to 31st July = 31
Days from 1st August to 14th August = + 14
Total days = 84

Thus, Here are 84 days between 22nd May and 15th August.

(c) Days from 24th March to 31st March = 8
Days from 1st April to 30th April = 30
Days from 1st May to 31st May = 31
Days from 1st June to 15th June =+15
Total days = 84

Thus, Here are 84 days between 23rd March and 16th June.

(d) Days from 13th December to 31st Dec. = 19
Days from 1st January to 30th Jan. = + 30
Total days = 49

Sol.3. (a) No. of days from 8th May to 31st May = 24
No. of days from 1st June to 9th June = + 9
Total days = 33

(b) No. of days from 21st July to 31st July = 11
No. of days in August = 31
No. of days from 1st Sep. to 12th Sep. = + 12
Total days = 54

(c) No. of days from 20th Sep. to 30thSep. = 11
No. of days in October = 31
No. of days in November = 30
No. of days from 1st December to 3rd Dec. = 3
Total days = 75

(d) No. of days from 17th April to 30th April = 14
No. of days in May = 31
No. of days in June = 30
No. of days from 1st July 15th July = + 15
Total days = 90

Sol.4. Date after 15 days from 15th Sep. = 29th Sep.
Thus, the teacher will join on 30th Sep.

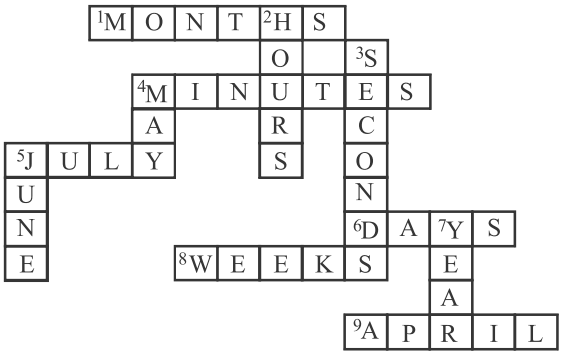
Sol.5. No. of days from 15th August to 31st August = 17
No. of days from 1st Sep. to 20th Sep. = + 20
Total days = 37

Sol.6. No. of days from 17th June to 30th June = 14
No. of days from 1st July. to 10th July = + 10
Total days = 24

Sol.7. Date after 25 days from 10th May = 4rd June

Sol.5. Date before 20 days from 15th August = 27 July

Creative Activity



Maths Skills

Sol.1. (a) 4 hours after 6:30 A.M. = (6:30 + 4) A.M. = 10:30 A.M.

(b) 4 hours after 8:15 P.M. = (8:15 + 4) P.M. = 00:15 A.M.

(c) 4 hours after 2:57 P.M. = (2:57 + 4) P.M. = 6:57 P.M.

(d) 4 hours after 10:45 P.M. = (10:45 + 4) P.M. = 2:45 A.M.

Sol.2. (a) 2 hours before 6:15 A.M. = (6:15 – 2) A.M.
= 4:15 A.M.
(b) 2 hours before 10:25 P.M. = (10:25 – 2) P.M.
= 8:25 P.M.
(c) 2 hours before 6:45 P.M. = (6:45 – 2) P.M.
= 4:45 P.M.
(d) 2 hours before 11:00 A.M. = (11:00 – 2) A.M.
= 9:00 A.M.

Sol.3. (a) 12:05 P.M. to 7:30 P.M.
= 12:05 P.M. to 7:05 P.M. + 7:05 P.M. to 7:30 P.M.
= 7 hours + 25 minutes
= 7 hours 25 minutes
(b) 8:00 A.M. to 1:00 P.M.
= 8:00 A.M. to 12:00 Noon + 12:00 Noon to 1:00 P.M.
= 4 hours + 1 hour = 5 hours

Sol.4. (a) 7:30 A.M. to 8:15 A.M.
= 7:30 A.M. to 8:00 A.M. + 8:00 A.M. to 8:15 A.M.
= 30 minutes + 15 minutes = 45 minutes
(b) Quarter to two to quarter past two
= 1:45 to 2:15
= 15 min + 15 min = 30 minutes

Sol.5. (a) hours minutes

$$\begin{array}{rr} 4 & 26 \\ +\ 5 & 30 \\ \hline 9 & 56 \end{array}$$

= 9 hours 56 minutes

Sol.6. (b) hours minutes

$$\begin{array}{rr} 10 & 12 \\ -\ 7 & 28 \\ \hline 2 & 44 \end{array}$$

= 2 hours 44 minutes

Sol.7. 45 minutes after 5:10 A.M.
= (5:10 + 0:45) A.M.
= 5:55 A.M.
At 5:55 A.M. Vikas starts for school.

Sol.8. 1750 hours = (17 – 12) : 50 = 5:50 P.M.
Time of departure = 5:50 P.M.

Sol.9. 3 hours 45 minutes after 5:20 P.M.
= (5:20 + 3:45) P.M. = 8:65 P.M.
= 9:05 P.M.
The train arrived at 9:05 P.M.

Sol.10. 9:15 A.M. = 0915 hours
6 hours 51 minutes = + 0651 hours
1566 hours
= 15 + (1h + 06m)
= 1606 hours = [(12 + 4) : 06] P.M.
= 4 : 06 P.M.

HOTS

Sol.1. 1 day = 24 hours
= 24 × 60 minutes = 1440 minutes
= 1440 × 60 seconds = 86400 seconds

Sol.2. 1 week = 7 days
= 7 × 24 hours = 168 hours
= 168 × 60 minutes = 10080 minutes
= 10080 × 60 seconds = 604800 seconds

Sol.3. 1 year = 365 days
= 365 × 24 hours
= 8760 hours = 8760 × 60 minutes
= 525600 × 60 seconds
= 31536000 seconds

Sol.4. 1 leap year = 366 days
= 366 × 24 hours = 8784 hours
= 8784 × 60 minutes
= 527040 minutes
= 527040 × 60 seconds
= 31622400 seconds

Maths Olympiad

Sol.1. (a) 1908 because it is divisible by 4.

Sol.2. (c) seconds

Sol.3. (b) 1200

Sol.4. (a) hours minutes

$$\begin{array}{rr} 3 & 20 \\ +\ 2 & 35 \\ \hline 5 & 55 \end{array}$$

= 5 × 60 min + 55 min
= (300 + 55) min = 355 min
∴ (b)

Sol.5. 12 noon = 1200 hours
3 hours 30 min = – 0330 hours
0830 hours
= 8:30 A.M. ∴ (a)

Sol.6. 9:30 A.M. to 3:30 P.M. = 9:30 A.M. to 12 noon + 12 noon to 3:30 P.M.
= 2 h 30 min + 3 h 30 min
= 5 h 60 min
= 6 hours (b)

Sol.7. 6:30 P.M. = [(12 + 6) : 30] hours
= 1830 hours (d)

Sol.8.
$$\begin{array}{r} 13 \\ 7\overline{)95} \\ -7 \\ \hline 25 \\ -21 \\ \hline 4 \end{array}$$

95 days = 13 weeks 4 days (c)

Chapter-14
Money

Test Prep 14.1

Sol.1. (a) Seventeen rupees and ninety paise = ₹ 17.90
(b) Two hundred rupees and eight paise = ₹ 200.08
(c) Eleven rupees and five paise = ₹ 11.05
(d) Six paise = ₹ 0.06

Sol.2. (a) ₹ 76.50 = Seventy-six rupees and fifty paise
(b) ₹ 165.25 = One hundred sixty-five rupees and twenty-five paise
(c) ₹1008.85 = One thousand eight rupees and eighty-five paise
(d) ₹ 1.08 = One rupee and eight paise

Sol.3. (a) ₹ 85.05 = (85.05 × 100) p = 8505 p
(b) ₹ 5 = 5 × 100 p = 500 p
(c) ₹ 10.20 = 10.20 × 100 p = 1020 p
(d) ₹ 29.85 = 29.85 × 100 p = 2985 p

Sol.4. (a) 39 rupees 8 paise = 39 × 100 paise + 8 paise
= (3900 + 8) paise
= 3908 paise
(b) 62 rupees = 62 × 100 paise = 6200 paise
(c) 3 rupees 55 paise = 3 × 100 paise + 55 paise
= (300 + 55) paise
= 355 paise

Sol.5. (a) 506 paise = ₹ $\frac{506}{100}$ = ₹ 5.06

(b) 1355 paise = ₹ $\frac{1355}{100}$ = ₹ 13.55

(c) 4789 paise = ₹ $\frac{4789}{100}$ = ₹ 47.89

Test Prep 14.2

Sol.1. (a)
₹	P
647	50
408	25
+36	85
1092	60

(b)
₹	P
268	45
376	38
+439	62
1084	45

(c)
₹	P
4654	09
860	56
+ 78	33
5592	98

Sol.2. (a)
₹	P
705	30
– 78	56
626	74

(b)
₹	P
356	50
– 298	75
57	75

(c)
₹	P
2000	00
–625	48
1374	52

Sol.3.
	₹	P
Cost of pencil =	6	40
Cost of eraser =	8	65
Cost of ink pen =	+57	75
Total amount =	72	80

Sol.4.
	₹	P
Cost of biscuits =	106	65
Cost of bread =	27	45
Cost of toffees =	+ 8	95
Total cost =	143	05

	₹	P
Amount given to shopkeeper =	500	00
Total cost =	–143	05
Amount Mitali gets back =	356	95

Sol.5.
	₹	P
Cost of a shirt =	1265	85
Cost of trousers =	896	45
Cost of an underwear =	+78	05
Total cost =	2240	35

	₹	P
Amount given to shopkeeper =	2500	00
Total cost =	–2240	35
Amount Kumkum gets back =	259	65

Test Prep 14.3

Sol.1. (a) 4585 × 8 = 36680

∴ 4585 × 8 = 36680

₹ 45.85 × 8 = ₹ 366.80

(b) 9076 × 45 = 408420

∴ 9076 × 45 = 408420

₹ 90.76 × 45 = ₹ 4084.20

(c) 41465 × 16 = 663440

∴ 41465 × 16 = 663440

₹ 414.65 × 16 = ₹ 6634.40

(d) 24606 × 20 = 492120

∴ 24606 × 20 = 492120

₹ 246.06 × 20 = ₹ 4921.20

Sol.2. (a) 6 | 5250 → 875

∴ 5250 ÷ 6 = 875

₹ 52.50 ÷ 6 = ₹ 8.75

(b) 8 | 29904 → 3738

∴ 29904 ÷ 8 = 3738

₹ 299.04 ÷ 8 = ₹ 37.38

(c) 12 | 49080 → 4090

∴ 49080 ÷ 12 = 4090

₹ 490.80 ÷ 12 = ₹ 40.90

(d) 10 | 105660 → 10566

∴ 105660 ÷ 10 = 10566

₹ 1056.60 = ₹ 105.66

Sol.3. Cost of 1 kg of rice = ₹ 63.50

Cost of 15 kg of rice = ₹ 63.50 × 15

= ₹ 952.50

6350 × 15 = 95250

Sol.4. Cost of 1 calculator = ₹ 928.45

Cost of 16 calculators = ₹ 928.45 × 16

= ₹ 14855.20

92845 × 16 = 1485520

Sol.5. Cost of 10 kg of potatoes = ₹ 103.50

Cost of 1 kg of potatoes = ₹ 103.50 ÷ 10

= ₹ 10.35

10 | 10350 → 1035

Sol.6. Pocket money of 7 days = ₹ 320.25

Pocket money of 1 day = ₹ 320.25 ÷ 7

= ₹ 45.75

7 | 32025 → 4575

Test Prep 14.4

Sol.1.

Raj Provision Store **Malviya Nagar, Jaipur**			
S.No. 226			**Date : 30.11.20**
Name : _____			
Quantity	**Description**	**Rate**	**Amount**
2 Kg	Ghee	₹ 725.45 per Kg	₹ 1450.90
10	Soap-cake	₹ 15.50 per piece	₹ 155.00
5 kg	Rice	₹ 81.50 per kg	₹ 407.50
3 kg	Sugar	₹ 48.50 per Kg	₹ 145.50
		Grand Total	₹ 2158.90

Sol.2 (a)

Stationery shop					
Bill.No. 105				**Date : 01.10.20**	
Name : ________					
S.No.	**Description**	**Quantity**	**Rate**	**Amount**	
			Per item	₹	P
1.	Notebooks	—	—	20	50
2.	Pencils	—	—	42	75
3.	Eraser	—	—	4	00
4.	Books	—	—	54	25
			Total	121	50

(b)

Vegetable Shop					
Bill.No. 205				**Date : 02.11.20**	
Name : ________					
S.No.	**Description**	**Quantity**	**Rate**	**Amount**	
			Per item	₹	P
1.	Potatoes	—	—	22	75
2.	Tomatoes	—	—	15	00
3.	Peas	—	—	41	00
4.	Ginger	—	—	9	55
			Total	88	30

Sol.3 (a)

Big Bazar					
Bill.No. 216				**Date : 04.10.20**	
Name : ________					
S.No.	**Description**	**Quantity**	**Rate**	**Amount**	
			Per item	₹	P
1.	Sugar	2 Kg	₹25 per kg	50	00
2.	Flour	3 Kg	₹15 per kg	45	00
3.	Butter	500 gm	₹160 per kg	80	00
			Total	205	00

(b)

Big Bazar					
Bill.No. 305				**Date : 15.10.20**	
Name : ________					
S.No.	**Description**	**Quantity**	**Rate**	**Amount**	
			Per item	₹	P
1.	Sugar	5 Kg	₹40 per kg	200	00
2.	Flour	5 Kg	₹25 per kg	125	00
3.	Butter	1 Kg	₹75 per kg	75	00
			Total	400	00

Maths Skills

Sol.1. (a) 20 rupees 20 paise
= 20 × 100 paise + 20 paise
= 2000 paise + 20 paise
= 2020 paise

(b) ₹ 50.08 = 50.8 × 100 p = 5008 p

Sol.2. (a) 88 p = ₹ (88 ÷ 100) = ₹ 0.88
(b) 347 p = ₹ (347 ÷ 100) = ₹ 3.47
(c) 3658 p = ₹ (3658 ÷ 100) = ₹ 36.58
(d) 8347 p = ₹ (8347 ÷ 100) = ₹ 83.47

Sol.3. (a)
```
  ₹ 225.20
+₹ 478.75
  ₹ 703.95
```
(b)
```
  ₹ 120.50
  ₹  85.78
+₹ 275.78
  ₹ 482.06
```

Sol.4. (a)
```
  ₹ 90.45
–₹ 79.50
  ₹ 10.95
```
(b)
```
  ₹ 293.00
–₹ 276.25
  ₹  16.75
```

Sol.5. (a)
```
  1 0 4 0
      × 9
  9 3 6 0
```
₹ 10.40 × 9 = ₹ 93.60

(b)
```
  3 2 7 0
      × 8
2 6 1 6 0
```
₹ 32.70 × 8 = ₹ 261.60

Sol.6. (a)
```
     12209
  5)61045
   – 5
     11
   – 10
      10
    – 10
      045
     – 45
        0
```
₹ 610.45 ÷ 5 = ₹ 122.09

(b)
```
       4390
  22)96580
    – 88
      85
    – 66
      198
    – 198
       00
     – 00
        0
```
₹ 965.80 ÷ 22 = ₹ 43.90

Sol.7. Cost of one sack of sugar = ₹ 1276.75
Cost of 5 sacks of sugar = ₹ 1276.75 × 5
= ₹ 6383.75
```
 127675
    × 5
 638375
```

Sol.8. Cost of 1 pen = ₹ 35.35
Cost of 32 pens = ₹ 35.35 × 32
= ₹ 1131.20
```
   3535
   × 32
   7070
 106050
 113120
```

Sol.9. Prize money distributed among 8 children = ₹ 868
Prize money each child gets = ₹ 868 ÷ 8
= ₹ 108.50

$$\begin{array}{r} 108.5 \\ 8\overline{)868.0} \\ -8 \\ \hline 68 \\ -64 \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

Sol.10. Fruits = ₹ 122.35
Vegetables = ₹ 189.75
Groceries = ₹ 135.75
Chocolates = ₹ 18.50
Total cost = ₹ 466.35
Money father had = ₹ 600.00
Expenditure = – ₹ 466.35
Balance = ₹ 133.65

HOTS

Sol. Students must try to understand the concept carefully.
Cost of tea = ₹ 25
Three factors get back = ₹ 3
Tip to the waiter = ₹ 2
Total = ₹ 30
So, there must be no confusion.

Maths Olympiad

Sol.1. (a) rupee

Sol.2. ₹ 100 = 100 × 100 p = 10000 p
No. of 25 p coins = 10000 ÷ 25 = 400
∴ (d)

Sol.3. 2 rupees = 2 × 100 p = 200 p
∴ (b)

Sol.4. No. of 50 rupees notes = 1000 ÷ 50 = 20
∴ (b)

Sol.5. 12 rupees and 25 paise = ₹ 12.25

Sol.6. 500 paise = ₹ (500 ÷ 100) = ₹ 5
∴ (a)

Sol.7. Cost of 4 pencils at ₹ 3.30 each = ₹ 3.30 × 4
= ₹ 13.20
Cost of 2 erasers at ₹ 1.85 each = ₹ 1.85 × 2
= ₹ 3.70
Total cost = ₹ 16.90
∴ (d)

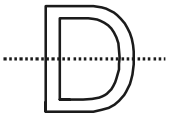
Sol.8. Cost of 18 packets = ₹ 22.50
Cost of 1 packet = ₹22.50 ÷ 18
= ₹ 1.25
∴ (b)

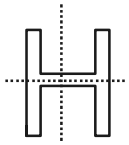
Chapter-15
Symmetry And Pattern

Test Prep 15.1

Sol.1. (a) Yes (b) Yes (c) Yes (d) Yes (e) No (f) Yes

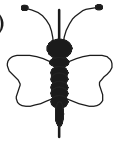
Sol.2. (a) Yes (b) No (c) No (d) Yes

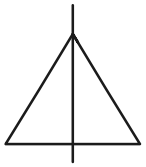
Sol.3. (a) 

(b) 

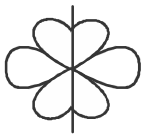
(c) 

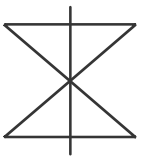
Sol.4. (a) Yes (b) No (c) Yes

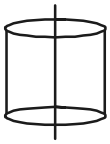
Sol.5. (a) 

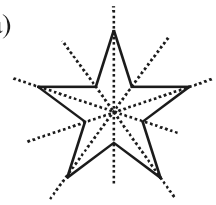
(b) 

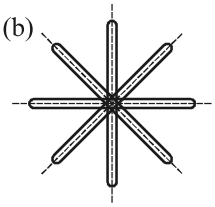
(c) 

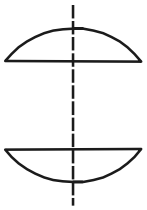
(d) 

(e) 

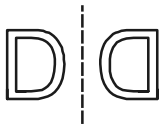
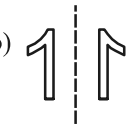
(f) 

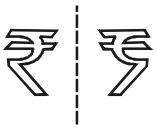
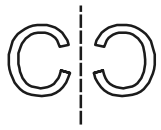
Sol.3. (a) 

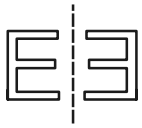
(b) 

(c) 

Sol.7. (a) (ii)
(b) (iii)

Sol.8. (a)  (b) 

(c)  (d) 

(e) 

Test Prep 15.2

Sol.1. (a) 

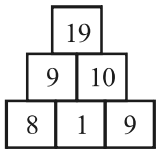
(b) 

(c) 

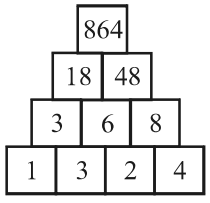
Sol.2. (a) $1 \times 9 + 2 = 11$
$12 \times 9 + 3 = 111$
$123 \times 9 + 4 = 1111$
$1234 \times 9 + 5 = 11111$
$12345 \times 9 + 6 = 11111$

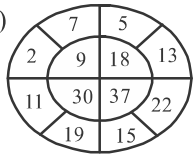
(b) $111 \div 3 = 37$
$222 \div 6 = 37$
$333 \div 9 = 37$
$444 \div 12 = 37$
$555 \div 15 = 37$

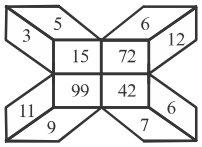
Sol.3. (a)



(b)



Sol.4. (a) 

(b) 

Sol.5. (a) $1 + 2 + 3 + 4 = 10$ (b) $7 + 8 + 9 + 10 = 34$
(c) $3 + 4 + 5 + 6 = 18$ (d) $6 + 7 + 8 + 9 = 30$

Rule : The sum is equal to twice the sum of two middle terms.

Sol.6. (a) $65 \times 65 = 4225$
(b) $505 \times 505 = 255025$
(c) $195 \times 195 = 38025$
(d) $345 \times 345 = 119025$

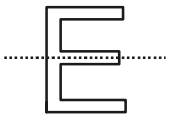
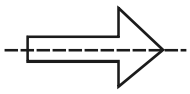
Sol.7. (a) $7 \times 7 - 6 \times 6 = 7 + 6 = 13$
(b) $8 \times 8 - 7 \times 7 = 8 + 7 = 15$
(c) $9 \times 9 - 8 \times 8 = 9 + 8 = 17$
(d) $10 \times 10 - 9 \times 9 = 10 + 9 = 19$

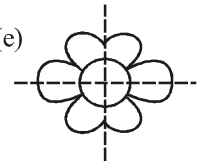
Sol.8. (a) SAVE = 19012205 WATER = 2301200518
(b) BEST = 02051920 OF = 1506 LUCK = 12210311

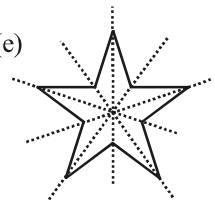
Sol.9. (a) 02211202 = BULB
(b) 201516160518 = TOPPER

Maths Skills

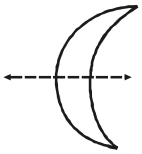
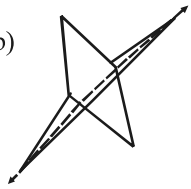
Sol.1. (a) No (b) Yes (c) No (d) Yes (e) No

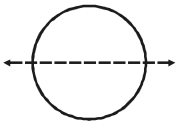
Sol.2. (a)  (b) 

(e)  (d) 

(e) 

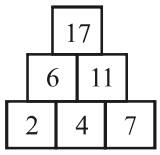
Sol.3. (a) (iii) (b) (ii)

Sol.4. (a)  (b) 

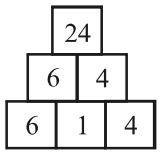
(d)  (e) 

Sol.5. (a) 95, 90, 85, 80, 75, 70, 65, 60
(b) 1, 4, 9, 16, 25, 36, 49
(c) 6, 12, 24, 48, 96, 192, 384
(d) 98, 87, 76, 65, 54, 43, 32

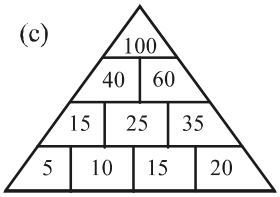
Sol.6. (a)



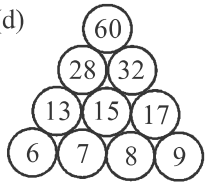
(b)



(c)



(d)



Sol.7. (a) FREEDOM = 06180505041513
(b) HONESTY = 08151405192025
(c) COUNTRY = 03152114201825

Sol.8. (a) 0801161625 = HAPPY
(b) 2008180505 = THREE
(c) 0904091520 = IDIOT

HOTS

Ajay multiply a number by 3 and then added 1.

Maths Olympiad

Sol.1. (d) 4
Sol.2. (b) 2
Sol.3. (b) W
Sol.4. (c) V
Sol.5. (c) N
Sol.6. 4 + 5 = 9 (c)
Sol.7. (a) HAVE FUN

Chapter-16
Perimeter and Area

Test Prep 16.1

Sol.1. (a) Perimeter = 40 cm + 6 cm + 40 cm + 6 cm
= 92 cm

(b) Perimeter $= \left(2\frac{1}{2}+3\frac{1}{2}+2\frac{1}{2}+3\frac{1}{2}\right)$m

$= \left(\frac{5}{2}+\frac{7}{2}+\frac{5}{2}+\frac{7}{2}\right)$m

$= \left(\frac{5+7+5+7}{2}\right)$m

$= \frac{24}{2}$m $= 12$ m

(c) Perimeter = (2 + 5 + 2 + 5) cm = 14 cm

Sol.2. Do yourself

Measure the sides of the given shapes with the help of scale and then add them.

Sol.3. Perimeter of field A = 11cm + 12cm + 16cm + 6 m
= 45 cm

Perimeter of field B = 7m + 2m + 7m + 7m + 14m + 9m = 46m

Since, 46m > 45m, so perimeter of field B is greater than perimeter of field A.

Thus, field B has longer boundary.

Sol.4. (a) Perimeter = (3 + 2 + 3 + 2 + 3 + 4 + 9 + 4) cm
= 30 cm

(b) Perimeter = (4 + 3 + 2 + 2 + 3 + 5)m = 19 cm

Sol.5. (a) Perimeter = $(8 + x + 8 + x)$ cm

$50 = 16 + 2x$

$50 - 16 = 2x$

$x = \frac{34}{2} = 17$ cm

Missing length = 17 cm

(b) Perimeter = $4 + 15 + x + 28$

$78 = 47 + x$

$x = 78 - 47 = 31$

Missing length = 31 cm

Sol.6. (a) Perimeter of ΔABC = (6 + 7 + 5) cm
= 18 cm

(b) Perimeter of ΔABC = (4.5 + 2.3 + 7) cm
= 13.8 cm

(c) Perimeter of ΔABC = (4.2 + 4.2 + 4.2) cm
= 12.6 cm

Sol.7. (a) Perimeter of rectangle = 2 (length + breadth)
= 2 (11+ 6) cm = 2 × 17cm = 34 cm
(b) Perimeter of rectangle = 2 (length + breadth)
= 2 (6 + 5)cm = 22 cm

Sol.8. Perimeter of a square = 4 × side
(a) Perimeter = 4 × 4 cm = 16 cm
(b) Perimeter = 4 × 6 cm = 24 cm
(c) Perimeter = 4 × 507 cm = 2028 cm = 20m 28cm

Sol.9. Length = 1m 50 cm = 150 cm
Breadth = 50 cm
Perimeter of carpet = 2 (l + b)
= 2 (150 + 50) cm = 2 × 200 cm = 400 cm = 4m
Lace required for one carpet = 4m
Lace required for 5 carpet = 5 × 4m = 20 m
Length of lace left over = 50 m – 20 m = 30 m

Sol.10. Distance covered in one round = perimeter of triangular park
= (90 + 120 + 150) m
= 360 m
Distance covered in 4 round = 4 × 36 m
= 1440 m

Sol.11. Perimeter of the garden = 34 m + 28 m + 39 m + 29 m
= 130 m
Cost of fencing at ₹ 2 per meter = ₹ (2 × 130)
= ₹ 260

Sol.12. Perimeter of the field = 2 (l + b) = 2 (40 + 20)m
= 2 × 60 m = 120 m

No. of rounds = $\frac{600}{120}$ = 5

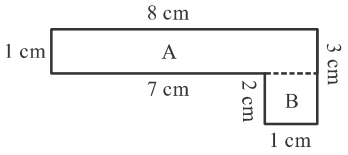
Test Prep 16.2

Sol.1. Area of rectangle = length × breadth
(a) Area = 24 × 9 sq.cm = 216 sq.cm
(b) Area = 30 × 18 sq.cm = 540 sq.cm
(c) Area = 15.6 × 10.5 sq.m = 163.8 sq.m
(d) Area = 22.8 × 14 sq.m = 319.20 sq.m

Sol.2. Area of a square = side × side
(a) Area = 16 × 16 sq.cm = 256 sq.cm
(b) Area = 22 × 22 sq.m = 484 sq.m
(c) Area = 45 × 45 sq.km = 2025 sq.km
(d) Area = 115 × 115 sq.m = 13225 sq.m

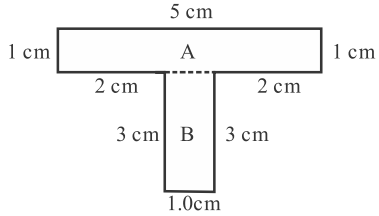
Sol.3. (a) No. of squares = 8
Area = 8 sq.cm
(b) No. of squares = 14
Area = 14 sq.cm

Sol.4. (a) We divide the figure in two



Rectangles A and B.
Length of A = 8 cm
Breadth of A = 1 cm
Area of A = 8 × 1 sq.cm = 8 sq.cm
Length of B = 2 cm
Breadth of B = 1 cm
Area of B = 2 × 1 sq.cm = 2 sq.cm
Area of shape = (8 + 2) sq.cm = 10 sq.cm

(b)



Length of A = 5 cm
Breadth of A = 1cm
Area of A = l × b = 5 × 1 sq.cm
= 5 sq.cm
Length of B = 3 cm
Breadth of B = 1.0 cm
Area of B = l × b = 3 × 1.0 sq.cm = 3 sq.cm
Area of shapes = (5 + 3) sq.cm = 8 sq.cm

Sol.5. (a) The shape covers 6 full squared and 4 half squares.
Area = $\left(6+\frac{1}{2}\times 4\right)$ sq.unit = (6 + 2) sq.unit = 8 sq.unit
(b) The shape covers 8 full squares and 4 half squares.
Area = $\left(8+\frac{1}{2}\times 4\right)$ sq.unit = (8 + 2)sq.unit
= 10sq. unit

Sol.6. Length = 260 m
Width = 225 m
Area = length × width
= 260 × 225 sq.m
= 58500 sq.m

Sol.7. Length = 28 m, breadth = 10 m
Area = $l \times b = 28 \times 10$ sq.m. = 280 sq.m.
Thus, 280 sq.m. carpet is required.

Sol.8. Length = 16 cm, breadth = 10 cm
Length of frame = perimeter of frame
$= 2(l + b) = 2 \times (16 + 10)$ cm
$= 2 \times 26$ cm = 52 cm

Sol.9. Side of square tile = 32 cm
Area of square tile = side × side
$= 32 \times 32$ sq.cm = 1024 sq.cm

Sol.10. Length of a side of frame = 48 cm
Length of golden thread = 4 × side = 4 × 48 cm
= 192 cm

Maths Skills

Sol.1. (a) Perimeter = (10 + 10 + 17) cm = 37 cm
(b) Perimeter = (10 + 20 + 10 + 10 + 20 + 10) m
= 80 m
(c) Perimeter = (5 + 6 + 1 + 2 + 4 + 4)cm = 22 cm

Sol.2. (a) Perimeter = $5 + 10 + x$
$29 = 15 + x$
$x = 29 - 15 = 14$ cm
Missing length = 14 cm
(b) Perimeter = $5 + 5 + 4 + x + 4$
$24 = 18 + x$
$x = 24 - 18 = 6$ cm
Missing length = 6 cm

Sol.3. (a) Perimeter of shape = (0.5 + 1 + 3 + 2 + 4 + 3) cm
= 13.5 cm
(b) Perimeter of shape = (2 + 1 + 2 + 1 + 2 + 2 + 6 + 4) = 20 cm
Thus, shape (b) has bigger perimeter.

Sol.4. (a) Aread = $l \times b = 5 \times 2$ sq.cm = 10 sq.cm
(b) Area = 6×3 sq.cm = 18 sq.cm
(c) Area = side × side = 4×4 sq.cm = 16 sq.cm

Sol.5. (a) No. of squares = 7
Area of the shape = 7 sq.unit
(b) No. of squares = 10
Area of the shape = 10 sq.unit
(c) No. of squares = 9
Area of the shape = 9 sq.unit

Sol.6. (a) No. of full squares = 4
Area = 4 sq.unit
(b) No. of full squares = 7
Area = 7 sq.unit
(c) No. of squares = 5
Area = 5 sq.unit
(d) No. of full squares = 6
No. of more than half squares = 3
No. of half squares = 2
Area = $\left(6 + 3 + \frac{1}{2} \times 2\right)$ sq.unit = 10 sq.unit

Sol.7. Length = 3m, breadth = 2m
Area = length × breadth = 3×2 sq.m = 6 sq.m
Perimeter = 2 (length + breadth) = 2 (3 + 2)m
$= 2 \times 5$m = 10m

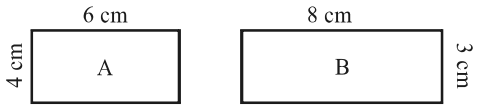
Sol.8. Side = 30 cm
Length of the frame = perimeter of square frame
$= 4 \times$ side $= 4 \times 30$ cm = 120 cm

Sol.9. Length = 3m, width = 2m
Length of lace = 2 (length + width)
= 2 (3 + 2) m $= 2 \times 5$m = 10m

Sol.10. Length = 96m, breadth = 64 m
Length of wire needed = perimeter of park
$= 2(l + b)$
$= 2(96 + 64)$ m
$= 2 \times 160$ m = 320 m
Cost of fencing at the rate of ₹ 4 per metre
= ₹(4×320) = ₹1280

HOTS

Sol.1. Look at the following rectangles.



Area of A = 6×4 sq.cm. = 24 sq.cm
Area of B = 8×3 sq.cm. = 24 sq.cm
Area of both the rectangles are equal.
Perimeter of A = 2 (6 + 4) cm = 2×10 cm = 20 cm
Perimeter of B = 2 (8 + 3) cm = 2×11 cm = 22 cm

Sol.2. (a) Area = $\left(1 + 1 + 1 + 1 + \frac{1}{2} \times 3\right)$ sq.unit
$= 4 + \frac{3}{2}$ sq.unit $= \frac{4 \times 2 + 3}{2} = \frac{11}{2}$
$= 5\frac{1}{2}$ sq.unit
(b) Area = 12 sq.unit
(c) Area = 6 sq.unit
(d) Area = 6 sq.unit
(e) Area = 25 sq.unit

Maths Olympiad

Sol.1. (b) sides

Sol.2. (c) breadth

Sol.3. Area of square = side × side = 15m × 15m
= 225 sq.m

∴ (b)

Sol.4. Area of rectangle = length × breadth

$8 = 4 \times$ breadth

$\text{Breadth} = \frac{8}{4} = 2\text{m}$

∴ (a)

Sol.5. Perimeter of square = 4 × side = 4 × 10 cm
= 40 cm

∴ (b)

Sol.6. Area of rectangle = 5cm × 4cm = 20 cm²

∴ (a)

Sol.7. Perimeter = (6 + 5 + 7)cm = 18 cm

∴ (c)

Sol.8. (a) Square unit

Chapter-17
Data Handling

Test Prep 17.1

Sol.1. (a) Scale : 1☺ = 6 students

No. of symbols for bicycle = $\frac{54}{6} = 9$

No. of symbols for car = $\frac{18}{6} = 3$

No. of symbols for bus = $\frac{30}{6} = 5$

No. of symbols for walking = $\frac{48}{6} = 8$

No. of symbols for scooter = $\frac{72}{6} = 12$

We have the following pictograph:

Modes	No. of students
Bicycle	☺☺☺☺☺☺☺☺☺
Car	☺☺☺
Bus	☺☺☺☺☺
Walking	☺☺☺☺☺☺☺☺
Scooter	☺☺☺☺☺☺☺☺☺☺☺☺

(b) Scale : 1☺ = 5 students

Game	No. of students
Football	☺☺☺☺☺☺☺☺☺
Cricket	☺☺☺☺☺☺☺☺☺☺
Badminton	☺☺☺☺☺☺☺☺
Volleyball	☺☺☺☺☺☺☺☺☺☺☺☺
Basketball	☺☺☺☺☺☺☺

Sol.2. (a) No. of symbols for Honda cars = 5

No. of staff members using Honda cars
= 5 × 10 = 50

(b) Toyota

(c) No. of members using Hyundai = 3 × 10 = 30

No. of members using Ford = 2 × 10 = 20

Difference = 30 – 20 = 10

(d) The repaired increasing order of th popularity of cars is:

Toyota < Ford < Hyundai < Honda < Maruti

Sol.3. (a) Fourth

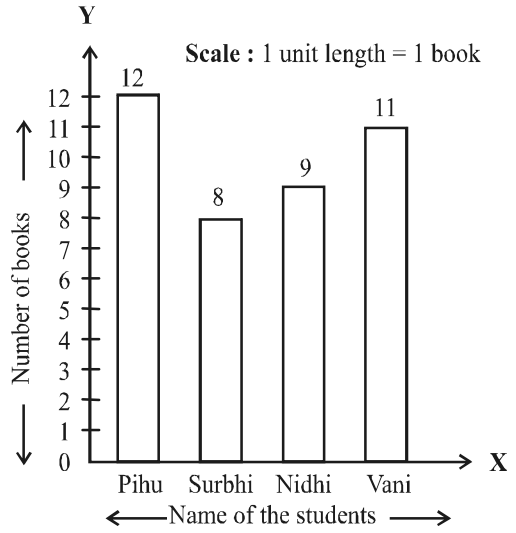
(b) No. of symbols = 18

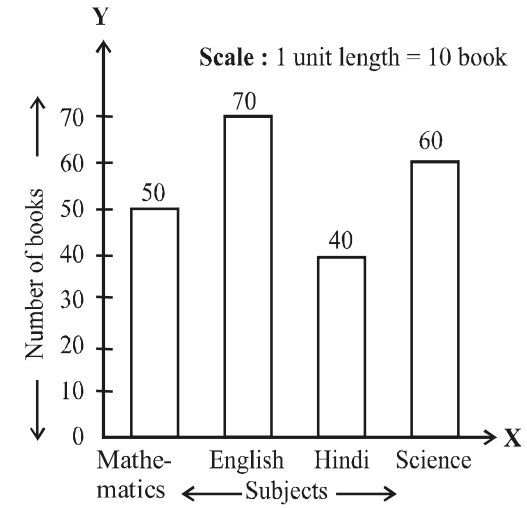
Total baskets of fruits = 18 × 50 = 900

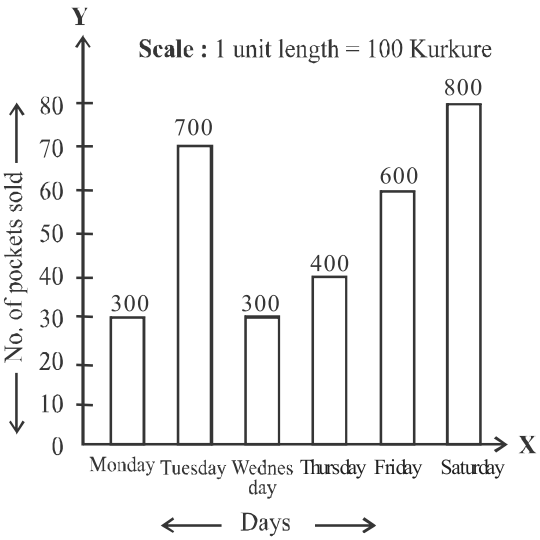
(c) Third week

Test Prep 17.2

Sol.1.







Sol.4. (a) 5
(b) 40
(c) Cricket
(d) Badminton

Sol.5. (a) 2019 ; 700
(b) 2017 ; 300
(c) 500
(d) Total cars = 500 + 300 + 400 + 700 = 1900

Test Prep 17.3

Sol.1.

Marks	Tally Marks	Number
2	I	1
3	I	1
4	II	2
5	I	1
6	IIII	4
7	II	2
8	I	1

Sol.2. (a) 12 (b) Movie

Test Prep 17.4

Sol.1. (a) Car (b) 30
(c) No. of students = 40 – 10 = 30

Sol.2. (a) Dhokla
(b) Makke ki roti and sarson ka sag
(c) Pulses and Roti (d) Pulses and Roti

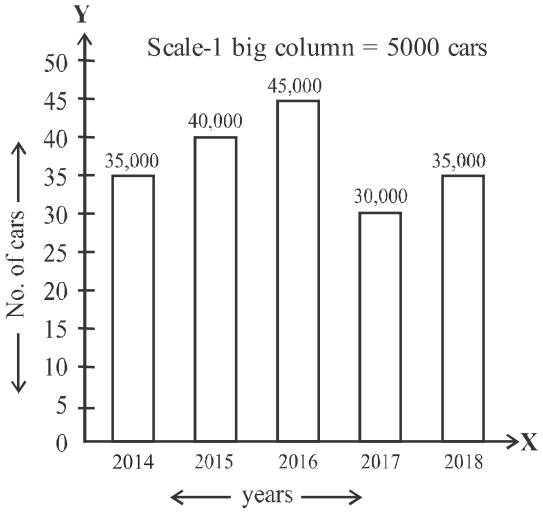
Maths Skills

Sol.1. (a) 6 (b) Cock

Sol.2. (a) Maths (b) Sanskrit

Sol.3. (a) 5 (b) Lady finger
(c) Brinjal

Sol.4.



Sol.5. (a) 5 (b) 20 (c) Pink (d) Red

Maths Olympiad

Observe the graph carefully and tick (✓) the correct answer.

Sol.1. (c) hours

Sol.2. (d) 46

Sol.3. (b) 7:30 a.m.

Sol.4. (b) 6

Sol.5. (a) 6:00 a.m.

Examination Preperation-II

Sol.1. (i)

(d) multiply by 1000

(ii) Perimeter of square = 4 × side

176 = 4 × side

$$\text{side} = \frac{176}{4} = 44\text{m}$$

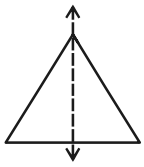
∴ (d)

(iii) (d) 54

(iv) $\frac{5}{7} = \frac{5\times5}{7\times5} = \frac{25}{35}$

∴ (c)

Sol.2. One



Sol.3. 29 December to 31 December = 3 days

Date 12 days after 1st January = 12th January

Thus, the school will reopen on 13th January.

Sol.4.

	minutes	seconds
	37	45
+	15	38
	52	83

= 52 min + 1 min + 23 sec

= 53 min 23 sec

	L	mL
Sol.6. Milk of one bucket =	16	825
Milk of other bucket = +	5	785
Total milk bucket =	22	610

Sol.7. (a) 1400 hours is the same as 2:00 P.M.

(b) Anti-Meridiem and Post-Meridiem are Latin words.

(c) The sun sets at 6:45 P.M.

(d) 3567 mg = 3g 567 mg

(e) 6382 mL = 6L 382 mL

(f) ₹1540.65 × 45 = ₹ 69, 329.25

Sol.8. Perimeter of triangle = (16 + 19 + 22) cm.

= 57 cm

Sol.9. Length = 135 metres, breadth = 92 metres

Length of wire needed = 2 (l + b)

= 2 (135 + 92) m

= 2 × 227 m = 454 m

Sol.10. (a) $\frac{3}{4} \times \frac{x}{16}$

By cross multiply

$4 \times x = 3 \times 16$

$$x = \frac{48}{4} = 12$$

$$\therefore \frac{3}{4} = \frac{\boxed{12}}{16}$$

(b) $\frac{2}{7} \times \frac{x}{21}$

$x \times 7 = 2 \times 21$

$$x = \frac{42}{7} = 6$$

$$\therefore \frac{2}{7} = \frac{\boxed{6}}{21}$$

(c) $\frac{3}{4} \times \frac{18}{x}$

$3 \times x = 4 \times 18$

$$x = \frac{72}{3} = 24$$

$$\therefore \frac{3}{4} = \frac{18}{\boxed{24}}$$

(d) $\frac{5}{7} = \frac{45}{x}$

$x \times 5 = 7 \times 45$

$$x = \frac{315}{5} = 63$$

$$\therefore \frac{5}{7} = \frac{45}{\boxed{63}}$$

Sol.11. (a) Perimeter = (12 + 3 + 5 + 6 + 5 + 3 + 12 + 3 + 5 + 6 + 5 + 3) = 68 cm

(b) Perimeter = (12 + 18 + 17 + 4 + 13 + 10 + 8 + 4) cm = 86 cm

Sol.12. (a) 2nd July, 2020 = Thursday

9th July, 2020 = Thursday

16th July, 2020 = Thursday

23rd July, 2020 = Thursday

Thus, 22nd July, 2020 = Wednesday

(b) 2nd July → 9th → 16th July → 23rd July → 30July → 6th August = Thursday

7th August = Friday

8th August = Saturday

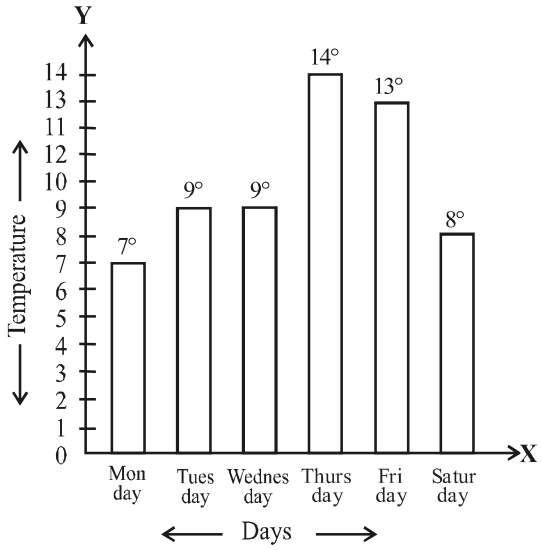
9th August = Sunday

Sol.13. 19th June to 30th June = 12 days

1st July to 7th July = 7 days

Total days = 19 days

Sol.14.



(a) Thursday (b) Monday

(c) Tuesday and Wednesday (d) 10°

Sol.15. (a) Pizza hut (b) Pizza corner (c) Nirula's

Sol.16. (a) Yes (b) No (c) No

Sol.17. Cost of chocolate bar = ₹ 120.80

Cost of ice-cream = ₹ 200.40

(a) Since, ₹ 200.40 > ₹ 120.80

So, ice-cream is costly.

(b) ₹ 200.40

− ₹ 120.80

₹ 79.60

Ice cream is more costly by ₹ 79.60

Sol.18. (a) Factors of 44 = 1, 2, 4, 11, 22, 44

Factors of 132 = 1, 2, 3, 4, 6, 11, 12, 22, 44, 66, 132

HCF = 44

Since, LCM × HCF = product of the numbers

LCM × 44 = 44 × 132

$$\text{LCM} = \frac{44\times132}{44} = 132$$

(b) Factors of 18 = 1, 2, 3, 6, 9, 18

Factors of 56 = 1, 2, 4, 7, 8, 14, 28, 56

HCF = 2

Since, LCM × HCF = product of the numbers

LCM × 2 = 18 × 56

$$\text{LCM} = \frac{18\times56}{2} = 504$$

(c) Factors of 24 = 1, 2, 3, 4, 6, 8, 12, 24

Factors of 36 = 1, 2, 3, 4, 6, 9, 12, 18, 36

HCF = 12

Since, LCM × HCF = product of the numbers

LCM × 12 = 24 × 36

$$\text{LCM} = \frac{24\times36}{12} = 72$$

Sol.19. (a) $\frac{2}{10}+\frac{5}{10}=\frac{2+5}{10}=\frac{7}{10}$

(b) $\frac{13}{14}-\frac{5}{14}=\frac{13-5}{14}=\frac{8}{14}=\frac{4}{7}$

(c) $1\frac{2}{5}+2\frac{3}{5}=\frac{7}{5}+\frac{13}{5}$

$$=\frac{7+13}{5}=\frac{20}{5}=4$$

(d) $2\frac{1}{7}-1\frac{5}{7}=\frac{15}{7}-\frac{12}{7}$

$$=\frac{15-12}{7}=\frac{3}{7}$$

Sol.20. Given fractions = $\frac{3}{11},\frac{8}{11},\frac{7}{11},\frac{2}{11}$

Here, denominators are same.

Since, 2 < 3 < 7 < 8

So, $\frac{2}{11}<\frac{3}{11}<\frac{7}{11}<\frac{8}{11}$

●●

Chapter-1 Reminder of Pre-Class

Sol.1. (a) Sixty-four thousand five hundred six = 64,506
(b) Forty-nine thousand eight hundred twenty-two = 49,822
(c) Three lakh four thousand two hundred ninety = 3,04,290
(d) Nine lakh ninety-nine thousand nine hundred ninety-nine = 9,99,999

Sol.2. (a) 265341 = Two lakh sixty-five thousand three hundred forty-one
(b) 18679 = Eighteen thousand six hundred seventy-nine
(c) 267890 = Two lakh sixty-seven thousand eight hundred ninety
(d) 325173 = Three lakh twenty-five thousand one hundred seventy-three

Sol.3. (a) XXV = 10 + 10 + 5 = 25
(b) XXXVII = 10 + 10 + 10 + 5 + 2 = 37
(c) XIX = 10 + (10 – 1) = 10 + 9 = 19
(d) XLVII = XL + VII = (50 – 10) + (5 + 2)
= 40 + 7 = 47

Sol.4. Greatest number = 66640

Sol.5. Smallest number = 300078

Sol.6. Greatest number = 98675

Sol.7. Smallest number = 10234

Sol.8. (a) Ascending order is:
45029, 45092, 45290, 50294, 386254
(b) Descending order is:
986325, 540226, 25400, 8932, 6680

Sol.9. Since, 3450 > 3054

$$\begin{array}{r} 3450 \\ -3054 \\ \hline 396 \end{array}$$

Surbhi ran 396 m more.

Sol.10. 2, 13, 37.

Sol.11.

$$\begin{array}{r} 2000\text{ mL} \\ -850\text{ mL} \\ \hline 1150\text{ mL} \end{array} \qquad \begin{array}{r} 2000\text{ mL} \\ -1675\text{ mL} \\ \hline 325\text{ mL} \end{array}$$

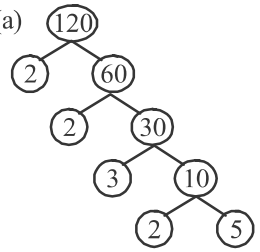
1150 mL more soft drink can be added to first bottle and 325 mL soft drinks can be added to second bottle.

Sol.12. (a) Place value of 8 in 238046 = 8000
(b) Place value of 0 in 340597 = 0

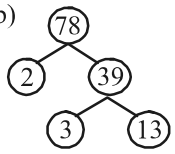
Sol.13. (a) 75893 = 70000 + 5000 + 800 + 90 + 3
(b) 20785 = 20000 + 700 + 80 + 5
(c) 389647 = 300000 + 80000 + 9000 + 600 + 40 + 7
(d) 450708 = 400000 + 50000 + 700 + 8

Sol.14. (a) 800000 + 40000 + 2000 + 500 + 60 + 7 = 842567
(b) 900000 + 60000 + 300 + 1 = 960301

Sol.15 (a)



(b)



Sol.16. (a) 3, 6, 12, 24, 48, 96, 192
(b) 4, 7, 10, 13, 16, 19, 22
(c) 1, 8, 27, 64, 125, 216, 343

Sol.17. (a) $\frac{3}{16}+\frac{7}{16}=\frac{3+7}{16}=\frac{10}{16}$

$$=\frac{2\times5}{2\times2\times2\times2}=\frac{5}{2\times2\times2}=\frac{5}{8}$$

(b) $\frac{9}{17}-\frac{4}{17}=\frac{9-4}{17}=\frac{5}{17}$

(c) $\frac{7}{9}+1\frac{2}{9}+\frac{1}{9}=\frac{7}{9}+\frac{11}{9}+\frac{1}{9}=\frac{7+11+1}{9}$

$$=\frac{19}{9}=2\frac{1}{9}$$

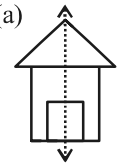
(d) $3\frac{1}{8}-2\frac{3}{8}=\frac{25}{8}-\frac{19}{8}=\frac{25-19}{8}=\frac{6}{8}$

$$=\frac{2\times3}{2\times2\times2}=\frac{3}{2\times2}=\frac{3}{4}$$

Sol.18. Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36,.....
Multiples of 4 = 4, 8,12, 16, 20, 24, 28, 32, 36,...
Multiples of 6 = 6, 12, 18, 24, 30, 36, ...
Multiples of 18 = 18, 36, 54,.....
LCM = 36
Factors of 3 = 1, 3
Factors of 4 = 1, 2, 4
Factors of 6 = 1, 2, 3, 6
Factors of 6 = 1, 2, 3, 6, 9, 18
HCF = 1

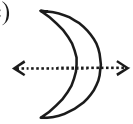
Sol.19. Cost of 5 pencils = ₹125
Cost of 1 pencil = ₹125 ÷ 5 = ₹25
Cost of 15 pencil = ₹ 25 × 5 = ₹375

Sol.20 (a)



(b) No

(c)



(d) No

Sol.21. Cost of 3 kg potatoes = ₹ 3 × 30 = ₹ 90
Cost of 3 kg onions = ₹ 2 × 45 = ₹ 90
Cost of 1 kg peas = ₹ 1 × 80 = ₹ 80
Cost of 5 kg carrots = ₹ 5 × 40 = ₹ 200
Cost of 2 kg cauliflower = ₹ 2 × 35 = ₹ 70
Total = ₹ 540
Money given to shopkeeper = ₹ 500 + ₹ 200
= ₹ 700
Balance = ₹ 700 – ₹ 540 = ₹ 160

Sol.22. (a) (i) Time after 2 hours 30 minutes = 4:45 pm
(ii) Time after 9 hours 45 minutes = 12:00 mid-night
(b) (i) Time before 3 hours 30 minutes = 10:45 am
(ii) Time before 1 hour 50 minutes = 12:25 pm

Sol.23. (a) Perimeter of A = 2 (4 + 3) units = 14 units
(b) Perimeter of B = (4 + 4 + 2 + 2 + 2 + 2) units
= 16 units
(c) Area of A = 12 sq. units
(d) Area of B = 12 sq. units

Sol.24.

Cakes	Number of cakes
Chocolate cake	☺☺☺☺☺☺☺
Cheese cake	☺☺☺☺☺☺☺
Ice-cream cake	☺☺☺☺☺
Log cake	☺☺☺☺☺☺

(a) Here, 40 – 30 = 10
Mr. Smith made 10 more chocolate cakes.
(b) Cost of 25 ice-cream cakes = ₹ 12×25 = ₹ 300
(c) Cost of 35 Cheese cakes = ₹ 35 × 8 = ₹ 280
Cost of 30 log cakes = ₹ 30 × 3 = ₹ 90
Difference in costs = ₹ 280 – ₹ 90 = ₹ 190
(d) Total cakes = 40 + 35 + 25 + 30 = 130

Sol. 25. (a) The bar graph shows the favourite game of some students of a class.
(b) 7
(c) Cricket
(d) Total students = 6 + 8 + 10 + 7 + 7 = 38

Chapter-2 Number System

Test Prep 2.1

Sol.1. (a) 8,05,67,281 (b) 3,20,40,632
(c) 7,00,16,003 (d) 60,06,06,066
(e) 40,32,00,005 (f) 29,53,26,184

Sol.2. (a) 5,26,42,780 = Five crore twenty-six lakh forty-two thousand seven hundred eighty
(b) 3,05,40, 812 = Three crore five lakh forty thousand eight hundred twelve
(c) 6,00,37,004 = Six lakh thirty-seven thousand four
(d) 70,07,07,077 = Seventy crore seven lakh seven hundred seventy-seven
(e) 43, 28,75,916 = Forty-three crore twenty-eight lakh seventy-five thousand nine hundred seven
(f) 28, 64, 37, 196 = Twenty -eight crore sixty four lakh thirty-seven thousand one hundred ninety-six.

Sol.3. (a) 6308092 (b) 9,93,30,820
(c) 530609102 (d) 800705400

Test Prep 2.2

Sol.1. (a) 70,028,102 (b) 92,003,000
(c) 642,145, 254 (d) 15,099,406

Sol.2. (a) Sixty million seven hundred fifty-nine thousand eight hundred five
(b) Three hundred million three hundred sixty-six thousand nine hundred thirty-six
(c) Six hundred eighty million four thousand nine hundred three.
(d) Four million five hundred forty thousand five hundred sixty-two
(e) Ninety-five million four hundred ninety-three thousand two hundred seven
(f) Three hundred forty-eight million nine hundred sixty-seven thousand fifty

Test Prep 2.3

Sol.1. (a) 5,67,85,032 = 5,00,00,000 + 60,00,000 + 7,00,000 + 80,00 + 5,000 + 30 + 2
(b) 9,68,49,892 = 9,00,00,000 + 60,00,000 + 8,00,000 + 40,000 + 9,000 + 800 + 90 + 2
(c) 31,09,06,812 = 30,00,00,000 + 1,00,00,000 + 9,00,000 + 6,000 + 800 + 10 + 2
(d) 48,35,86,942 = 40,00,00,000 + 8,00,00,000 + 30,00,000 + 5,00,000 + 80,000 + 6,000 + 900 + 40 + 2

(e) 18,64,42,508 = 10,00,00,000 + 8,00,00,000 + 60,00,000 + 4,00,000 + 2,000 + 500 + 8

(f) 80,80,40,703 = 80,00,00,000 + 80,00,000 + 40,000 + 700 + 3

Sol.2. (a) 98,30,05, 367 (b) 1,23,45,678

Sol.3. (a) 50,000 (b) 100
(c) 200 (d) 80,000
(e) 70,00,000 (f) 5,00,00,000

Sol.4. Place value of first 9 = 90000000
Place value of second 9 = + 900
Sum = 90000900

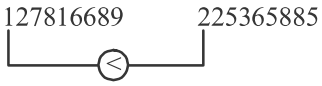
Sol.5. Place value of 5 = 50000000
Place value of 2 = – 2900
Sum = 4998000

Sol.6. (a) 98,25,600 (b) 2,00,00,000
(c) 3,06,10,009 (d) 10,00,00,000

Sol.7. (a) 7,35,99,999 (b) 3,01,50,609
(c) 9,83,11,109 (d) 9,99,999

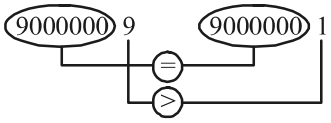
Test Prep 2.4

Sol.1. (a) 611278953 ⟶ 9 digits
611278953 ⟶ 8 digits
So, 611278953 is greater.
(b) 127816689 ⟶ 9 digits
225365885 ⟶ 9 digits



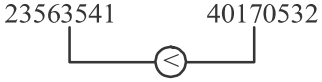
So, 225365885 is greater.

Sol.2. (a) 9000000 9 ⟶ 8 digits
9000000 1 ⟶ 8 digits



So, 90000001 is smaller in each pair.
(b) 9037848 ⟶ 7 digits
91537964 ⟶ 8 digits
So, 9037848 is smaller.

Sol.3. (a) 698789 ⟶ 6 digits
6542001 ⟶ 7 digits
698789 < 6542001
(b) 23563541 ⟶ 8 digits
40170532 ⟶ 8 digits



23563541 < 40170532

(c) 201312301 ⟶ 9 digits
30963845 ⟶ 8 digits
201312301 > 30963845
(d) 203521601 ⟶ 9 digits
4856729 ⟶ 7 digits
203521601 > 4856729

Sol.4. (a) 9957611 (b) 35715

Sol.5. (a) 647095832 (b) 300042201

Sol.6. (a) 48309641, 51785305, 62573348, 625749365
(b) 9836549, 90463785, 90574302, 91783468

Sol.7. (a) 107819355, 12345678, 10557533, 10547532

Test Prep 2.5

Sol.1. (a) Greatest number = 7653
Smallest number = 3567
(b) Greatest number = 97610
Smallest number = 10679
(c) Greatest number = 9865420
Smallest number = 2045689

Sol.2. (a) Greatest number = 77777530
Smallest number = 30000057
(b) Greatest number = 99998430
Smallest number = 3000489

Sol.3. (a) Greatest number = 999996420
Smallest number = 200000469
(b) Greatest number = 888875310
Smallest number = 100003578

Sol.4. (a) 864100 (b) 98750
(c) 9843210 (d) 9854320

Sol.5. (a) 305789 (b) 1024568
(c) 2025789 (d) 2004789

Test Perp 2.6

Sol.1. (a) 965 ⟶ 970
(b) 3242 ⟶ 3240
(c) 20406 ⟶ 20410
(d) 54897 ⟶ 54900
(e) 205413 ⟶ 205410
(f) 408379 ⟶ 408380

Sol.2. (a) 12670 to the nearest
hundreds: 12670 ⟶ 12700
hundreds: 12670 ⟶ 13000
ten-hundreds: 12670 ⟶ 10000
(b) 47645 to the nearest
hundreds: 47645 ⟶ 47600
hundreds: 47645 ⟶ 48000
ten-hundreds: 47645 ⟶ 50000
(c) 25893 ⟶ 25900; 26000; 30000

(d) 31982 → 32000; 32000; 30000
(e) 547124 → 547100; 547000; 550000
(f) 258356 → 258400; 258000; 260000
(g) 562780 → 562800; 563000; 56000
(h) 1670248 → 1670200; 1670000; 1670000

Sol.3. (a) 1925432 to the nearest
lakhs : 1925432 → 1900000
ten lakhs : 1925432 → 2000000
(b) 3427926 → 3400000; 3000000
(c) 8156803 → 8200000; 8000000
(d) 8729542 → 8700000; 9000000
(e) 2534105 → 2500000; 3000000
(f) 17370546 → 17400000; 17000000
(g) 36524183 → 36500000; 37000000
(h) 64035568 → 64000000; 64000000

Sol.4. (a) 83654925 → 80000000
(b) 107352320 → 110000000
(c) 70869789 → 70000000
(d) 95612316 → 10000000

Creative Activity

Sol.1. M = 1, A = 10, T = 100, H = 1000
ATMH = 1010011000 → 10 digits
HMAT = 1000110100 → 10 digits
ATH = 101001000 → 9 digits
MHA = 1100010 → 7 digits
MTA = 110010 → 6 digits
MATH = 1101001000 → 10 digits
Largest = MATH (1101001000)

Maths Skill

Sol.1. (a) 1000 thousand = 1 millon
(b) 100 lakhs = 10 millon
(c) 10 millon = 1 crore
(d) 100 thousand = 1 lakh
(e) There are 7 zeroes in 8 crores.

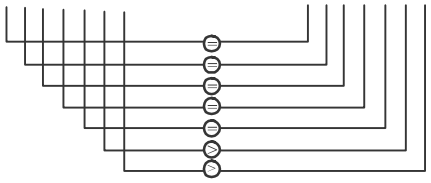
Sol.2. (a) 2,40,56,789 = Two crores forty lakh fifty-six thousand seven hundred eighty-nine
24,056,789 = Twenty four million fifty-six thousand seven hundred eighty-nine
(b) 4,00,09,653 = Four crore nine thousand six hundred fifty-three
40,009,653 = Forty million nine thousand six hundred fifty-three
(c) 99,99,98,974 = Ninety-nine crore ninety nine lakh ninety-eight thousand nine hundred seventy-four
999,998,974 = Nine hundred ninety-nine million nine hundred ninety-eight thousand nine hundred seventy-four
(d) 8,05,112,040 = Eighty crore fifty-one lakh twelve thousand forty
805,112,040 = Eighty hundred five million one hundred twelve thousand forty

Sol.3. (a) 12372645 = 10000000 + 2000000 + 300000 + 70000 + 2000 + 600 + 40 + 5
(b) 23434008 = 20000000 + 3000000 + 400000 + 30000 + 4000 + 8
(c) 453020546 = 400000000 + 50000000 + 3000000 + 20000 + 500 + 40 + 6
(d) 750048932 = 700000000 + 50000000 + 40000 + 8000 + 900 + 30 + 2

Sol.4. (a) 40,69,30,719 (b) 8,19,09,990
(c) 24,06,07,104 (d) 84,119,016
(e) 689,069,046 (f) 30,805,106

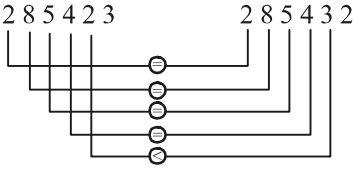
Sol.5. (a) In 28506793,
the place value of 2 = 20000000
the place value of 6 = 6000
(b) In 36254487,
the place value of 2 = 200000
the place value of 6 = 6000000
(c) In 34522668,
the place values of 2 are 20000 and 2000.
the place values of 6 are 600 and 60.

Sol.6. (a) 4 0 9 2 9 7 9 4 0 9 2 9 3 2

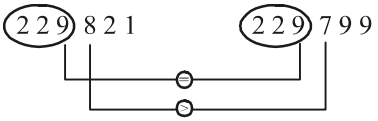


So, 4092979 ≥ 4092932

(b) 2 8 5 4 2 3 2 8 5 4 3 2



So, 285423 ≤ 285432
(c) 478952 has 6 digits.
8952 has 4 digits.
So, 478952 ≥ 8952
(d) 6850 has 4 digits.
6852345 has 7 digits.
So, 6850 ≤ 6852345
(e) 83675 has 5 digits.
367500 has 6 digits.
83675 ≤ 367500

(f) 

So, 229821 ⊵ 229799

Sol.7. (a) Greatest number = 876430

(b) Smallest number = 304678

(c) Greatest number = 9865310

(d) Smallest number = 1035689

HOTS

Sol. (a) 50 (b) 9900 (c) 28000 (d) 600 (e) 100 (f) 2000

Maths Olympiad

Tick (✓) the correct order.

Sol.1. (b) period

Sol.2. (d)

Sol.3. (b) millions

Sol.4. 100 million = 100,000,000

(b) 8

Sol.5. Place value of 8 in 80621579 = 80000000

(b) eighty million

Sol.6. (b) 10

Chapter-3 Roman Numerals

Test Prep 3.1

Sol.1. (a) 332 = 300 + 30 + 2

= CCC + XXX + II = CCC XXX II

(b) 459 = 400 + 50 + 9 = CD + L + IX = CDLIX

(c) 586 = 500 + 80 + 6 = D + LXXX + VI = DLXXXVI

(d) 981 = 900 + 80 + 1

= CM + LXXX + I = CMLXXXI

(e)1650 = 1000 + 600 + 50

= M + DC + L = MDCL

(f) 3500 = 3000 + 500 = MMM + D = MMMD

(g) 3741 = 3000 + 700 + 14 = MMM + DCC + XIV = MMMDCCXIV

(h) 3825 = 3000 + 800 + 20 + 5

= MMM + D CCC + XX + V = MMMDCCCXXV

Sol.2. (a) CCC III = CCC + III = 300 + 3 = 303

(b) C D XXX V III = CD + XXX + VIII

= 400 + 30 + 8 = 438

(c) CCC XXX V = CCC + XXX + V

300 + 30 + 5 = 335

(d) CCC L XXX V = CCC + L + XXX + V

= 300 + 50 + 30 + 5 = 385

(e) D C X V = DC + XV = 600 + 15 = 615

(f) D C L V = DC + LV = 600 + 55 = 655

(g) C M L XXX I X = C M + L X X X + I X

= 900 + 80 + 9 = 989

(h) M M C L X V I I I = M M + C L + X V I I I

= 2000 + 150 + 18 = 2168

Sol.3. (a) LX = 60 and XL = 40

60 ⊵ 40

LX ⊵ XL

(b) IX = 9 and XI = 11

9 ⊴ 11

IX ⊴ XI

(c) LV = 55 and XV = 15

55 ⊵ 15

LV ⊵ XV

(d) XCIII = 93 and CXIII = 113

93 ⊴ 113

XCIII ⊴ CXIII

(e) CD = 400 and CCCXC = 390

400 ⊵ 390

CD ⊵ CCCXC

(f) CXLIX = 100 + 40 + 9 = 149 and CLXXXIX = 150 + 30 + 9 = 189

149 ⊴ 189

CXLIX ⊴ CLXXXIX

Sol.4. (a) XXII – XX = 22 – 20 = 2

(b) XLIII – XL = 43 – 40 = 3

(c) LVIII – L = 58 – 50 = 8

(d) VIII × XVII = 8 × 17 = 136

(e) LXIV – LX = 64 – 60 = 4

(f) LXXXI ÷ IX = 81 ÷ 9 = 9

Sol.5. (a) Ascending order is:

V, X, XV, XL, XC, C

(b) Ascending order is:

XVII, XLII, LIX, LX, LXXV, XCIX

(c) Ascending order is:

XXIV, XXVI, XXXII, LXV, LXXX, XCV

Sol.6. (a) Descending order is:

XCII, LXXXIII, XLIII, XIX, IX

(b) Descending order is:

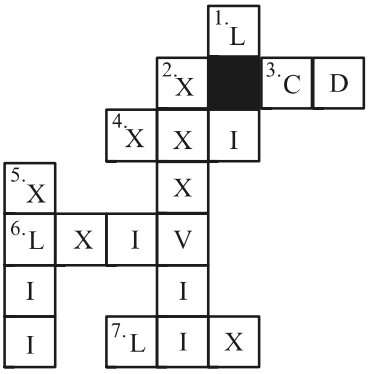
XCIX, LXVII, LV, XLIX, XXX, XVIII

(c) Descending order is:

XCVI, LXXV, LXVI, LIV, XLVII

Creative Activity

Sol.



Maths Skills

Sol.1.

Hindu Arabic Numeral	Roman Numeral	Hindu Arabic Numeral	Roman Numeral
(a) 198	CXCVIII	(f) 348	CCCXLVIII
(b) 226	CCXXVI	(g) 340	CCCXL
(c) 245	CCXLV	(h) 362	CCCLXII
(d) 423	CDXXIII	(i) 407	CDVII
(e) 479	CDLXXIX	(j) 499	CDXCIX

Sol.2. (a) Romans did not use place value.

(b) Repetition of a symbol means addition.

(c) I can be subtracted from V and X only.

(d) C can be subtracted from D and M only.

(e) X can be subtracted from L and C only.

Sol.3. (a) Descending order is:

LXV, LX, XLII, XXXIX, XXXI

(b) Descending order is:

XCIX, XCVIII, XEIII, XCII, LXXXII

Sol.4. (a) Descending order is:

XCIX, CIX, CXIX, C XX, CXXI

(b) Descending order is:

CXCVI, CCXXV, CCXL, CCL X1, CCXC11

Sol.5. (a) Incorrect because V cannot be subtracted from X.

(b) Incorrect because V cannot be subtracted from X.

(c) Incorrect because V cannot be repeated.

(d) Incorrect because X cannot be subtracted from D.

(e) Incorrect because L cannot be subtracted from E.

(f) Incorrect because I cannot be subtracted from C.

(g) Correct

(h) Correct

Sol.6. (a) XLIX + XXXIX = (40 + 9) + (30 + 9)
= 49 + 39 = 88 = LXXXVIII

(b) XCIII – XVI = (90 + 3) – (16) = 93 – 16 = 77
= LXXVII

(c) LVIII – XXIX = 58 – 29 = 29 = XXIX

(d) LIV × VII = 54 × 7 = 378 = CCCLXXVIII

(e) CXIII + CXLIV = 113 + 144 = 257
= CCLVII

(f) LXXVIII ÷ VI = 78 ÷ 6 = 13 = XIII

HOTS

Sol.1. M ÷ CCL + MCCL – D
= 1000 ÷ 250 + 1250 – 500
= 4 + 1250 – 500 = 1254 – 500
= 754

Sol.2. D × M = 500 × 1000 = 500000
= five lakh
= five hundred thousand

Maths Olympiad

Tick (✓) the correct order.

Sol.1. (b) 0

Sol.2. (b) three

Sol.3. (a) seven

Sol.4. (b) V

Sol.5. (b) V and X

Sol.6. 1X + XV1 + XX111
= 9 + 16 + 23 = 25 + 23 = 48 (d)

Sol.7. CC – CXXV1 = 200 – 126 = 74 = LXX1V(a)

Sol.8. CDLX1 = CD + LX1 = 400 + 61 = 461
CDXL1X = CD + XL1X = 400 + 49 = 449
Since, 461 > 449, So CDLX1 is greater.
∴ (a)

Chapter-4 Operations on Numbers

Test Prep 4.1

Sol.1. (a)
$$\begin{array}{r} 38445616 \\ +\ 53295724 \\ \hline 91741340 \end{array}$$

(b)
$$\begin{array}{r} 75326958 \\ +\ 2784325 \\ \hline 78111283 \end{array}$$

(c)
$$\begin{array}{r} ३४६७८९५ \\ +२६०४७८० \\ \hline ६०७२६७५ \end{array}$$

(d) 3217668
1628045
+ 864365
5710078

(e) 435718572
98723569
+ 2685734
537127875

(f) २६७०२८१२५
१८०२२४२२९
+८१८१९३७३
५२९०७१७२७

Sol.2. (a) 456756
+367880
824636

(b) ८८७७४५०३
३७५२१३७
+६४८३२१७
९९००९८५७

(c) 37458650
7575218
+ 356008
45389876

(d) ४८१८००९००
८५०००००
९०००००००
+ ७५७००
५८०३७६६००

Sol.3. (a) 54⑦364⑨0
+①0970④784
6⑤711274

(b) ८५२⑨५⑧२
+ २⑤६७४⑤
⑦⑨८४②८७

(c) 1283⑥9
41⑧563
+ 9②3①75
1470①0⑦

(d) ③२ ६ ७
③८ ७ ५ ९
७ ३②४२
+ १२ ६ ६०१
②४१८६⑨

Test Prep 4.2

Sol.1. Price of house = ₹ 55 23 800
Price of car = ₹ + 8 49 350
Total = ₹ 6373150
Thus, Ajay spend ₹ 64,73,150 in all.

Sol.2. No. of soap cakes = २८३४८६९
No. of bottles = + ३५२८६१४७
Total items = ३८१२१०१६
Thus, Total items are ३८१२१०१६.

Sol.3. Population of Country A = 166586300
Population of Country B = + 81521350
Total Population = 248107650
Thus, Total Population of both cities is 248107650.

Sol.4. No. of males = 9841828
No. of females = + 3784182
Total eligible votes = 13626010
Thus, Total eligible votes are 136262010.

Sol.5. Money in the account = ₹४७३६१५०
Money deposited = + ₹२८८७२६०
Total money = ₹७५२३४१०
Thus, Mr. Khanna has ₹ 76,23,410 in his account.

Sol.6. Cloth made in 2016 = 123453607
Cloth made in 2017 = 45625430
Cloth made in 2018 = 56793986
Cloth made in 2019 = + 505042627
Total Cloth made = 731005650
Thus, 73,10,05,650 m cloth is made in four years.

Test Prep 4.3

Sol.1. (a) 6876172
– 2987284
3888888

(b) ३०१२०७८
– १९२७६५८
१०८३४२०

(c) ५००४६१३
– २४४५७०१
२५५८८१२

(d) 8328614
– 5834156
2494458

Sol.2. (a) 95896711
– 78165831
17730880

(b) ३०१२०७८
– २९२८६५८
६३८४९६१५

(c) ६५६५६८६४
– ३६७६८७८७
२८८८८०७८

(d) 10080708
– 1379809
8700899

(e) 789256701
– 697294389
91962312

(f) ६०१५१२०२२
– ४८५८९७०८४
१०५५२४९२८

Sol.3. (a) 6③5②600
–④3⓪7②2⑧
2045372

(b) ४0 0 0 0 0 0 0
– २⑥४⑧२⑤१⑧
①३⑤५⑨४⑦६

Sol.4. (a) 5859432 – 0 = 5859432
(b) ६५३२४८९ – १ = ६५३२४९८
(c) ६५५२० – ६५५२० = ०
(d) 378875 – 0 = 378875

Sol.5. (a) 658768 and 1090929
-431161 -786432
1090929 304497

So, $658768 + 431161 - 786432 = 304497$

(b) $8399385 - 5988662 + 4204206$
$= 8399385 + 4204206 - 5988662$
$= 6614929$

8399385 and 12603591
$+\ 4204206$ $-\ 5988662$
12603591 6614929

(c) $72354468 - 45316729 + 32623262$
$= 72354468 + 32623262 - 4531629$
$= 59661001$

72354468 and 104977730
$+\ 32623262$ $-\ 45316729$
104977730 59661001

Test Prep 4.4

Sol.1. Sum of two numbers = 58934705
One number = $-\ 21785 32$
Other number = 56756173

Sol.2. Total students = २८९१७६४५
No. of girls = – ७८२४३८७
No. of boys = २२०९३२५८

Sol.3. Weight of wheat = 468841 kg
Weight of rice = +314678 kg
Total weight = 783519 kg
Total cereal = 783519 kg
Cereal carried by the train = – 685824 kg
Cereal left behind = 97694 kg

Sol.4. Total voters = ७६५६३२२
No. of voters casting votes = – ५२९३४८८
Remaining votes = २३६२८३४

Sol.5. Money the man had = ₹6783954
Money borrowed = +₹3963545
Totoal money that man had = ₹10747499
Cost of house = ₹14875320
Money the man had = +₹10747499
Required money = ₹ 4127821

Sol.6. Thread used in March = २९३८५९६३
Thread used in March = – १९८०९८७९
Total thread used in two months = ४९१९५८४२
Total used in March = ५३००१२१९
Thred used in two months = + ४९१९५८४२
Thread left = ३८०५३७७

Test Prep 4.5

Sol.1. Rounding off to nearest 10:
28492 ⟶ 28490 and 34556 ⟶ 34560
28492
$+\ 34556$
Sum = 63050

Sol.2. Rounding off to nearest 100:
189786 ⟶ 189800 and 65728 ⟶ 65700
189800
$-\ 65700$
Difference = 124100

Sol.3. Rounding off to nearest 100:
879321 ⟶ 879300
527116 ⟶ + 527100
Sum = 1406400

Sol.4. Rounding off to nearest 1000:
987235 ⟶ 987000
236547 ⟶ – 237000
Difference = 750000

Sol.5. Rounding off to nearest 10,000:
78955 ⟶ 80000
35997 ⟶ + 40000
Sum = 120000

Sol.6. Rounding off to nearest 10,000 :
83345 ⟶ 80000
54563 ⟶ – 50000
Difference = 30000

Sol.7. Rounding off to nearest 1,00,000:
680993 ⟶ 700000
134088 ⟶ – 100000
Difference = 600000

Sol.8. Rounding off to nearest 1,00,000:
5356229 ⟶ 5400000
3309264 ⟶ – 3300000
Difference = 2100000

Sol.9. Rounding off to nearest 10,00,000:
3988888 ⟶ 4000000
7955214 ⟶ + 8000000
Sum = 12000000

Sol.10. Rounding off to nearest 10,00,000:
65658842 ⟶ 66000000
34225556 ⟶ – 34000000
Difference = 32000000

Test Perp 4.6

Sol.1. (a) $6841 \times 6432 = 6432 \times 6841$

(b) $৩৪৭২ \times ১২৩ = ১২৩ \times ৩৪৭২$

(c) $305 \times 4329 = 4329 \times 305$

(d) $1052 \times 254 = 254 \times 1052$

(e) $৩৬৫৫ \times ১ = ৩৬৫৫$

(f) $1 \times 8301 = 8301$

(g) $১০৫০ \times ০ = ০$

(h) $0 \times 346 = 0$

(i) $৫৩ \times (১০০ + ৬৩) = (৫৩ + ১০০) + (৫৩ + ৬৩)$

(j) $24 \times (1000 \times 39) = 241 \times 1000 + 241 \times 39$

(k) $573 \times (741 \times 309) = (573 \times 741) \times 309$

(l) $642 + (105 \times 579) = (642 \times 105) \times 579$

Sol.2. (a) $৫১৩২ \times ১০ = ৫১৩২০$

(b) $28761 \times 10 = 287610$

(c) $3783 \times 100 = 378300$

(d) $২২৩২৯ \times ১০০ = ২২৩২৯০০$

(e) $9806 \times 1000 = 9806000$

Sol.3. (a) $৪০৫৬ \times ২০ (৪০৫৬ \times ২) \times ২০$

$= ৫১১২ \times ১০ = ৫১১২০$

(b) $9999 \times 40 = (15325 \times 4) \times 10$

$= 399996 \times 10 = 399960$

(c) $15325 \times 400 = (15325 \times 4) \times 100$

$= 61300 \times 100 = 6130000$

(d) $1289 \times 300 = (1289 \times 3) \times 100$

$= 3867 \times 100 = 386700$

(a) $৯২৩ \times ৬০০০ (৯২৩ \times ৬) \times ১০০০$

$= ৫৫৬২ \times ১০০০ = ৫৫৬২০০০$

Sol.4. (a) $5 \times 764 \times 2 = 764 \times (5 \times 2) = 764 \times 10\ 7640$

(b) $২০ \times ৬৫৯১ \times ৫ = ৬৫৯১ \times (২০ \times ৫)$

$= ৬৫৯১ \times ১০০ = ৬৫৯১০০$

(c) $৪ \times ৪৫২ \times ১২৫ = ৪৫২ \times (৪ \times ১২৫)$

$= ৪৫২ \times ৫০০$

$= (৪৫২ \times ৫) = ১০০$

$= ৪২১০ \times ১০০ = ৪২১০০০$

(d) $4 \times 289 \times 25 = 289 \times (4 \times 25)$

$= 298 \times 100 = 28900$

(e) $2 \times 6257 \times 500 = 6257 \times (2 \times 500)$

$= 6257 \times 1000 = 6257000$

(f) $২৫০ \times ৬৫৫৯ \times ৪ = ৬৫৫৯ \times (২৫০ \times ৪)$

$= ৬৫৫৯ \times ১০০$

$= ৬৫৫৯০০০$

Test Prep 4.7

Sol.4. (a)

4586	
× 98	
36688	
412740	
449428	

(b)

25786	
× 59	
232074	
1289300	
1521374	

(c)

96532	
× 835	
482660	
2895960	
77225600	
80604220	

(d)

23678	
× 249	
213102	
947120	
4735600	
5895822	

(e)

12547	
× 786	
75282	
1003760	
8782900	
9861942	

(f)

19847	
× 684	
79388	
1587760	
11908200	
13575348	

(g)

৪৩৩৪	
× ৫৬৫২	
৯৪৬৫	
২৩৬৩০০	
২৫৪০৪০০	
৩৭৫৩২০০০	
৪০৯৫৫৫৬৫	

(h)

৩১২৩৫	
× ৪২৬	
২১৫৯৪৬	
৬২৫৫৬০	
১২৫১১২০০	
১১৫২২২০০	
১৩৩৫৫৩০৬	

(i)

৩১৫২৩	
× ২৩৬৩	
৫০২৩৬১	
৪৩০৯৩৫০	
২২৫৬৯০০	
১৪৩৬৪৬০০০	
১৩০০০৫০৪২	

Sol.2. (a) $45328 \times 78 = 3535584$

(b) $২৬৫৩২১ \times ১২৪ = ৩৩২৩১৫০৪$

(c) $8985 \times 2789 = 25059165$

(d) $১৫৬৫ \times ২০৩৪ = ৩১৫৯৩১২$

(e) $20386 \times 1746 = 35593956$

(f) $১৬৪৫৩ \times ২৫৬৫ = ৪২৩২২১২৯$

Test Prep 4.8

Sol.1. No. of schools = 12637
No of students in each school = 2035
Total students = 12637 × 2035 = 25716295

Sol.2. Milk sold in 1 day = 653 litres
Milk sold in 365 days = 653 × 365 litres
= 238345litres

Sol.3. Weight of 1 bag of rice = 104 kg 890g = 104890g
Weight of 658 bag of rice = 104890 ×658g
= 69017620g
= 69017kg 620g

Sol.4. Measure of 1 bundle of wire = 365 m 62 cm
= 35662 cm
Measure of 1 bundle of wire = 35662 × 234 cm
= 8344908 cm
= 83449 m 8 cm

Sol.5. No. of days in a leap year = ३६६
No. of holidays = २५
No. of working days = ३६६ – २५ = ३४१
No. of cycle produced in a days = ४९७
No. of cycle produced in ३४१ days
= ४९७ × ३४१
= ३०५५३६

Sol.6. No. of pencils in a box = १४४
No. of pencils in boxes= १४४ × २७६०८
= २५३५५५२
Difference = २५३५५५२ – २५३०९०० = ४६५२
The factory should produce ४६५२ more pencils.

Test Prep 4.9

Sol.1. (a) 236458 ÷ 263458 = 1
(b) 820054 ÷ 820054 = 1
(c) 39870 ÷ 1 = 39870
(d) 0 ÷ 250098 = 0
(e) 0 ÷ 324598 = 0
(f) 222088 ÷ 1 = 222088

Sol.2. (a)

```
      9269
 37 ) 342961
     -333
       99
      -74
       256
      -222
        341
       -331
         10
```

Quotient = 9269
Remainder = 10

(b)

```
      13429
 52 ) 698347
     -52
      178
     -156
       223
      -208
        154
       -104
         507
        -468
          39
```

Quotient = 13429
Remainder = 39

(c)

```
      20921
 47 ) 983297
     -94
      432
     -423
        99
       -94
         54
        -47
         10
```

Quotient = 20921
Remainder = 10

(d)

```
       20921
 123 ) 688045
      -615
        730
       -615
        1154
       -1107
          475
         -369
          106
```

Quotient = 5593
Remainder = 106

(e)

```
       2736129
 125 ) 342016125
      -250
        920
       -875
        451
       -375
         766
        -750
          161
         -125
           362
          -250
           1125
          -1125
              0
```

Quotient = 2736129
Remainder = 0

(f)

```
       13429
 148 ) 439715
       -296
        1437
       -1332
        1051
       -1036
          155
         -148
            7
```

Quotient = 2971
Remainder = 7

(g)

```
       10840
 359 ) 3891748
      -359
        3017
       -2872
        1454
       -1436
          188
         -000
            0
```

Quotient = 10840
Remainder = 188

(h)

```
       148273
 582 ) 86295031
       -582
        2809
       -2328
         4815
        -4656
          1590
         -1164
           4263
          -4074
            1891
           -1746
             145
```

Quotient = 148273,
Remainder = 145

(i)
$$\begin{array}{r} 89755 \\ 821\overline{)73688859} \\ -6568 \\ \hline 8008 \\ -7389 \\ \hline 6178 \\ -5747 \\ \hline 4515 \\ -4105 \\ \hline 4109 \\ -4105 \\ \hline 4 \end{array}$$

Quotient = 89755,
Remainder = 4

Sol.4. (a) Dividend = Ouotient × Division + Remainder
= 3078 × 189 + 97
= 581742 + 97 = 581839

(b) Dividend = 12545 × 212 + 6
= 2659540 + 6 = 2659546

Sol.5. (a) 23500 ÷ 100 (b) 97358000 ÷1000
Quotient = 2350 Quotient = 2350
Remainder = 0 Remainder = 0

(c) 24685 ÷ 10 (d) 42345678 ÷100
Quotient = 2468 Quotient = 42345678
Remainder = 1 Remainder = 78

(e) 28765433 ÷1000
Quotient = 287654
Remainder = 433

(f) 9875100 ÷10000
Quotient = 987
Remainder = 5100

Sol.6. Dividend = 4904, Quotient = 29, Remainder = 3
Dividend = Quotient × divisor + Remainder
4909 = 29 × divisor + 3
4904 – 3 = 29 × divisor

$$\text{Divisor} = \frac{4901}{29}$$

Divisor = 169

$$\begin{array}{r} 169 \\ 29\overline{)4901} \\ -29 \\ \hline 200 \\ -174 \\ \hline 261 \\ -261 \\ \hline 0 \end{array}$$

Test Prep 4.10

Sol.1. Cost of 216 mobile phones = ₹ 11,72,880

Cost of 1 mobile phone = $₹ \frac{11,72,880}{216}$
= ₹ 5430

$$\begin{array}{r} 5430 \\ 216\overline{)1172880} \\ -1080 \\ \hline 928 \\ -864 \\ \hline 648 \\ -648 \\ \hline 0 \end{array}$$

Sol.2. Money got by 125 labourers = ₹ 573125

Money got by each labourer = $₹ \frac{573125}{125}$
= ₹ 4585

$$\begin{array}{r} 5430 \\ 125\overline{)573125} \\ -500 \\ \hline 731 \\ -625 \\ \hline 1062 \\ -1000 \\ \hline 625 \\ -625 \\ \hline 0 \end{array}$$

Sol.3. Product of two numbers = ২০৩৬১৫৬
One of the numbers = ৬২৬
Other number = $\frac{২০৩৬১৫৬}{৬২৬}$

Sol.4. First we will divide ৬৩০৬০৮২ by ৮২৯

$$\begin{array}{r} ৮৮১৩ \\ ৮২৯\overline{)৬৩০৬০৮২} \\ -৬৬৩২ \\ \hline ৬৭৪০ \\ -৬৬৩২ \\ \hline ১০৮৮ \\ -৮২৯ \\ \hline ২৫৯২ \\ -২৪৮৭ \\ \hline ১০৫ \end{array}$$

We get ১০৫ as remainder. It means if we subtract ১০৫ from ৬৩০৬০৮২, we get ৬৩০৫৯৬৭ which is completely divisible by ৮২৯.
Thus, the required number to be subtracted is ১৫৫.

Sol.5. Total money = ₹ 75,68,825

Value of each share = ₹ 425

No,of shares = ₹ 75,68,825 ÷ ₹ 425

= 17809

```
        17809
425 ) 7568825
     – 425
       3318
      –2975
       3438
      –3400
        3825
       –3825
           0
```

Sol.6. Total apples = 85329

No. of rotton apples = 67

No. of good apples = 85329 – 67

= 85262

No. of apples in each box = 85262 ÷ 89

= 958

```
      958
89 ) 852625
     –801
       516
      –445
        712
       –712
          0
```

Sol.7. Total words = 995904

No. of pages = 1456

No. of words in each page = 995904 ÷ 1456

= 684

Total words in a page = 684

No. of line in a page = 38

No. of words in a line = 684 ÷ 38 = 18

Test Prep 4.11

Estimate the follwoing products:

Sol.1. 58763 × 320

Round off to the nearest hundred:

5873 ⟶ 5900 and 320 ⟶ 300

Estimated product = 5900 × 300 = 1770000

Sol.2. 127 × 4809

Round off to the nearest hundred:

127 ⟶ 100 and 4809 ⟶ 4800

Estimated product = 100 × 4800 = 480000

Sol.3. 935 × 780

Round off to the nearest hundred:

935 ⟶ 900 and 780 ⟶ 800

Estimated product = 900 × 800 = 720000

Sol.4. Earning per day = ₹ 947

No. of days in February = 28

Total earning = ₹ 947 × 28

Estimated earning = ₹ 950 × 30 = ₹ 28500

Sol.5. Cost of chair = ₹ 475

Cost of 184 chairs = ₹ 475 × 184

Estimated cost = ₹ 480 × 180 = ₹ 86400

Sol.6. No. of days from January to April = 31 + 28 + 31 + 30 = 120

No. of stickers sold in a day = 498

No. of stickers sold in 120 day = 498 × 120

Estimated stickers = 500 × 120

= 60000

Estimate the quotient:

Sol.7. 1835 ÷ 27

1835 ÷ 27 Round to 1800 ÷ 30

We think of 180 ÷ 30

Estimated quotient = 1800 ÷ 30

= 60

```
     60
3 ) 180
   –18
     00
    –00
      0
```

Sol.8. 685920 ÷ 7312

685920 ÷ 7312 Round to 686000 ÷ 700

We think of 686 ÷ 7

Estimated quotient = 686 ÷ 7

= 98

```
     98
7 ) 686
   –63
     56
    –56
      0
```

Sol.9. 3984 ÷ 368

3984 ÷ 368 Round to 4000 ÷ 400.

We think of 40 ÷ 4.

Estimated quotient = 40 ÷ 4

= 10

```
     10
4 ) 40
    40
     10
    –10
      0
```

Sol.10. Weight of 29 bags = 2869 kg

Weight of 1 bag = 2869 ÷ 29 kg

Estimated weight of 1 bag = 3000 ÷ 30 kg

= 100 kg

Sol.11. Cost of 2931 books = ₹ 627856

Cost of 1 book = ₹ 627856 ÷ 2931

Estimated cost of 1 book = 62800 ÷ 3000

= ₹ 209

Test Prep 4.12

Simplify:

Sol.1. $16 + 15 \div 5$
$= 16 + 15 \div 5$ (Perform ÷)
$= 16 + 3$ (Perform +)
$= 19$

Sol.2. $17 \times 10 \div 2$
$= 17 \times 10 \div 2$ (Perform ÷)
$= 17 \times 5$ (Perform ×)
$= 85$

Sol.3. $21 - 8 \times 2$
$= 21 - 8 \times 2$ (Perform ×)
$= 21 - 16$ (Perform –)
$= 5$

Sol.4. $35 \times 48 + 2024$
$= 35 \times 48 + 2024$ (Perform ×)
$= 1680 + 2024$ (Perform +)
$= 3704$

Sol.5. $4025 \div 175 + 1492$
$= 4025 \div 175 + 1492$
$= 23 + 1492$ (Perform ÷)
$= 1515$ (Perform +)

Sol.6. $16 - 8 \div 2 - 3$
$= 16 - 8 \div 2 - 3$ (Perform ÷)
$= 16 - 4 - 3$ (Perform –)
$= 12 - 3$ (Perform –)
$= 9$

Sol.7. $37 - 6 \times 4 + 32 \div 4$
$= 37 - 6 \times 4 + 32 \div 4$ (Perform ÷)
$= 37 - 6 \times 4 + 8$ (Perform ×)
$= 37 - 24 + 8$ (Perform +)
$= 45 - 24$ (Perform –)
$= 21$

Sol.8. $8 \times 13 - 4 \times 15$
$= 8 \times 13 - 4 \times 15$ (Perform ×)
$= 104 - 60$ (Perform –)
$= 44$

Sol.9. $96 \div 16 + 34 \times 10 - 13$
$= 96 \div 16 + 34 \times 10 - 13$ (Perform ÷)
$= 6 + 34 \times 10 - 13$ (Perform ×)
$= 6 + 340 - 13$ (Perform +)
$= 346 - 13$ (Perform –)
$= 333$

Sol.10. $14 - 28 + 36 \div 2$
$= 14 - 28 + 36 \div 2$ (Perform ÷)
$= 14 - 28 + 18$ (Perform +)
$= 32 - 28$ (Perform –)
$= 4$

Sol.11. $3 \times 4 - 27 \div 9 + 12 \times 4$
$= 3 \times 4 - 27 \div 9 + 12 \times 4$ (Perform ÷)
$= 12 - 3 + 12 \times 4$ (Perform ×)
$= 12 - 3 + 48$ (Perform +)
$= 60 - 3$ (Perform –)
$= 57$

Sol.12. $56 \div 14 \times 3 - 10 \div 5 + 1$
$= 56 \div 14 \times 3 - 10 \div 5 + 1$ (Perform ÷)
$= 4 \times 3 - 2 + 1$ (Perform ×)
$= 12 - 2 + 1$ (Perform +)
$= 13 - 2$ (Perform –)
$= 11$

Test Prep 4.13

Sol.1. No. of apples in 125 boxes = 534625
No. of apples in 1 box = 534625 ÷125= 1456
No. of apples in 184 boxes = 4277 ×184
= 786968

Sol.2. Cost of 198 metres long wire = ₹ 422928
Cost of 1 metre long wire = ₹ 422928 ÷ 198
= ₹ 2136
Cost of 267 metres long wire = ₹ 2136 ×267
= ₹ 570312

Sol.3. Packet required to pack 168 glass = 1
Packet required to pack 1 glass = $\frac{1}{168}$
Packet required to pack 766416 glasses
$= \frac{1}{168} \times 766416$
$= \frac{766416}{168} = 4562$
No. of glasses in 335 packets = 168 × 335
= 56280

Sol.4. No. of passengers in 346 buses = 25950
No. of passengers in 1 bus = 25950 ÷ 346 = 75
No. of passengers in 268 buses = 268 ×75
= 20100

Sol.5. Cost of 125 washing machines = ₹ 1657000
Cost of 1 washing machine = ₹ 1657000 ÷ 125
= ₹ 13256
Cost of 234 machine = ₹ 13256 × 234
= ₹ 3101904

Sol.6. No. of pages in 3826 books = 367296
No. of pages in 1 book = 367296 ÷ 3826 = 96
No. of pages in 1567 books = 1567 × 96
= 150432

Creative Activity

Do yourself.

Maths Skills

Sol.1. (a) $\begin{array}{r} 7984362 \\ +\ 2139845 \\ \hline 10124207 \end{array}$ and $\begin{array}{r} 10124207 \\ -\ 658976 \\ \hline 9465231 \end{array}$

$7984362 - 658976 + 2139845$

$= 10124207 - 658976 = 9465231$

(b) $9811836 + 11673 - 865006$

$= 9823509 - 895006$

$= 8928503$

(c) $2768956 - 2222267 + 1111694$

$= 3880650 - 2222267 = 1658383$

Sol.2. (a) $76 \times 30 = (76 \times 3) \times 10 = 228 \times 10 = 2280$

(b) $55 \times 80 = (55 \times 8) \times 10 = 440 \times 10 = 4400$

(c) $112 \times 40 = (112 \times 4) \times 10 = 448 \times 10 = 4480$

(d) $225 \times 60 = (225 \times 6) \times 10 = 1350 \times 10 = 13500$

(e) $88 \times 500 = (88 \times 5) \times 100 = 440 \times 100 = 44000$

(f) $122 \times 700 = (122 \times 7) \times 100 = 854 \times 10 = 85400$

(g) $344 \times 800 = (344 \times 8) \times 100 = 2752 \times 100$

$= 275200$

(h) $111 \times 900 = (111 \times 9) \times 100 = 999 \times 100$

$= 99900$

(i) $33 \times 40000 = (33 \times 4) \times 10000 = 132 \times 10000$

$= 1320000$

(j) $220 \times 5000 = (220 \times 5) \times 1000 = 1100 \times 1000$

$= 1100000$

(k) $303 \times 6000 = (303 \times 6) \times 1000 = 1818 \times 1000$

$= 1818000$

(l) $444 \times 8000 = (444 \times 8) \times 1000 = 3552 \times 1000$

$= 3552000$

Sol.3. (a) $25432 \times 534 = 13580688$

(b) $53460 \times 628 = 33572880$

(c) $94476 \times 3278 = 309692328$

(d) $65812 \times 4567 = 300563404$

Sol.4. (a) $61342 \div 18$

Quotient = 3407

Remainder = 16

(b) $5359 \div 73$

Quotient = 73

Remainder = 30

(c) $2960 \div 61$

Quotient = 773

Remainder = 53

(d) $496316 \div 241$

Quotient = 2059

Remainder = 97

(e) $2960472 \div 763$

Quotient = 3880

Remainder = 32

(f) $686683 \div 406$

Quotient = 1691

Remainder = 137

Sol.5. (a) $20 \div 5 - 2 \times 3 + 9$ (Perform ÷)

$= 4 - 2 \times 3 + 9$ (Perform ×)

$= 4 - 6 + 9$ (Perform +)

$= 13 - 6$ (Perform −)

$= 7$

(b) $12 \times 4 + 36 \div 4 - 37$ (Perform ÷)

$= 12 \times 4 + 9 - 37$ (Perform ×)

$= 48 + 9 - 37$ (Perform +)

$= 57 - 37$ (Perform −)

$= 20$

(c) $18 - 12 \div 4 + 4 \times 4$ (Perform ÷)

$= 18 - 3 + 4 \times 4$ (Perform ×)

$= 18 - 3 + 16$ (Perform +)

$= 34 - 3$ (Perform −)

$= 31$

(d) $8 + 4 \times 3 - 3 + 1 - 16 \div 4 - 6$ (Perform ÷)

$= 8 + 4 \times 3 - 3 + 1 - 4 - 6$ (Perform ×)

$= 8 + 12 - 3 + 1 - 4 - 6$ (Perform +)

$= 21 - 3 - 4 - 6$ (Perform −)

$= 18 - 4 - 6$ (Perform −)

$= 14 - 6$ (Perform −)

$= 8$

Sol.6. (a) $3 \times 4 \boxed{-} 2 = 10$

(b) $6 \div 3 \boxed{+} 6 = 8$

(c) $21 \boxed{\div} 3 + 11 = 18$

(d) $63 - 3 \boxed{\times} 21 = 0$

(e) $27 \boxed{\div} 3 - 8 = 1$

(f) $36 - 15 \boxed{\times} 2 = 6$

Sol.7. Cost of 18 watches = ₹ 17982

Cost of 1 watch = ₹ $17982 \div 18$

Estimated price of 1 watch = ₹ $18000 \div 18$ = ₹ 1000

HOTS

Sol.1. The number is 123 as $1 \times 2 \times 3 = 6$ and $1 + 2 + 3 = 6$

Sol.2. Time taken by 1 shirt to dry = 30 min

Time taken by 2 shirts to dry = 15 min

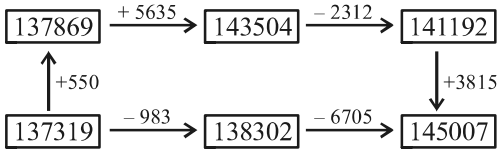
Time taken by 3 shirts to dry = 3×15 min

= 45 min

Sol.3. Smallest number = 49500

Greatest number = 510000

Sol.4.



Maths Olympiad

Tick (✓) the correct answer.

Sol.1. (c) minuend

Sol.2. (b) multiplicand

Sol.3. (c) quotient

Sol.4.
$$\begin{array}{r} 56432107 \\ +\,12340087 \\ \hline 68772194 \end{array} \qquad \begin{array}{r} 96596596 \\ -\,68772194 \\ \hline 27824402 \end{array}$$

$\therefore$ (b) 27824402

Sol.5. Eighty-two lakh forty thousand four hundred six = 8240406

Ninety-seven lakh = 9700000

$$\begin{array}{r} 9700000 \\ -\,8240406 \\ \hline 1459594 \end{array}$$

$\therefore$ (d) 1459594

Sol.6. No. of bulbs produced in a day = 13780

No. of bulbs produced in 278 days = 13780 × 278

= 3830840

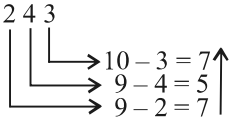
$\therefore$ (c) 3830840

Chapter-5 Vedic Mathematics

Test Prep 5.1

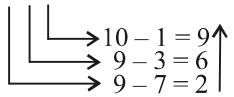
Sol.1. (a) No (b) No (c) Yes (d) Yes (e) No
(f) No (g) No (h) Yes (i) No (j) No

Sol.2. (a) Complement of 2 4 3



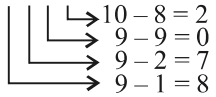
$\therefore$ Complement of 243 is 757.

(b) 7 3 1



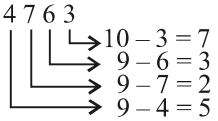
$\therefore$ Complement of 731 is 269.

(c) 1 2 9 8



$\therefore$ Complement of 1298 is 8702.

(d) 4 7 6 3



$\therefore$ Complement of 4763 = 5237

(e) Complement of 84056 = 15944

(f) Complement of 7060 = 2940

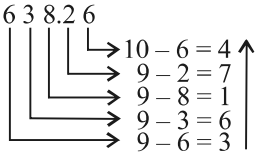
(g) Complement of 700 = 300

(h) Complement of 80900 = 19100

(i) Complement of 9100 = 900

(j) Complement of 80050 = 19950

(k) Complement of 6 3 8.2 6



(l) Complement of 724,850 = 275.150

(m) Complement of 9306.002 = 693.998

(n) Complement of 29346.38 = 70653.62

(o) Complement of 1208.050 = 8791.950

(p) Complement of 6409.20 = 3590.80

Test Prep 5.2.

Sol.1. (a) Ekadhikena of 5 = $\dot{5}$ = 6

(b) Ekadhikena of 18 = $1\dot{8}$ = 19

(c) Ekadhikena of 27 = $2\dot{7}$ = 28

(d) Ekadhikena of 31 = $3\dot{1}$ = 32

Sol.2. (a) Ekanyunena of 6 = $\underset{.}{6}$ = 5

(b) Ekanyunena of 17 = $1\underset{.}{7}$ = 16

(c) Ekanyunena of 26 = $2\underset{.}{6}$ = 25

(d) Ekanyunena of 35 = $3\underset{.}{5}$ = 34

Sol.3. (a) Ekadhikena-purvena of 8 = $\dot{0}8$ = 18

(b) Ekadhikena-purvena of 10 = $\dot{1}0$ = 20

(c) Ekadhikena-purvena of 18 = $\dot{1}8$ = 28

(d) Ekadhikena-purvena of 25 = $\dot{2}5$ = 35

Sol.4. (a) Ekadhikena-purvena of 17 = $\underset{.}{\dot{1}}7$ = 7

(b) Ekadhikena-purvena of 25 = $\underset{.}{\dot{2}}5$ = 15

(c) Ekadhikena-purvena of 366 = $3\underset{.}{6}6$ = 356

(d) Ekadhikena-purvena of 852 = $8\underset{.}{5}2$ = 842

Test Prep 5.3

Sol.1. (a) 8 × 12, Base = 10

= 8 – 2

12 + 2

= 12 – 2/(–2) × 2

= 10/– 4

= 9/10 – 4

= 9/6

= 96

(b) 4 × 11, Base = 10

= 4 – 6

11 + 1

= 11 – 6/(–6) × 1

= 5/– 6

= 4/10 – 6

= 4/4

= 44

(c) 3 × 12, Base = 10

= 3 – 7

12 + 2

= 12 – 7/(–7) × 2

(d) 9 × 12, Base = 10

= 9 – 1

12 + 2

= 12 – 1/(–1) × 2

$= 5/-14$
$= 4/10-14$
$= 4/-4$
$= 3/10-4$
$= 3/6-4$
$= 36$

(e) 8×11, Base $= 10$
$= 8 \quad -2$
$\quad 11 \quad +1$
$= 11-2/(-2)\times 1$
$= 9/-2$
$= 8/10-2$
$= 8/8$
$= 88$

$= 11/-2$
$= 10/10-2$
$= 10/8$
$= 108$

(f) 7×13, Base $= 10$
$= 7 \quad -3$
$\quad 13 \quad +3$
$= 13-3/(-3)\times 3$
$= 10/-9$
$= 9/10-9$
$= 9/1$
$= 91$

Maths skills

Sol.1. (a) $\begin{array}{r} 8\ 2 \\ -\dot{5}\ 4 \\ \hline 2\ 8 \end{array}$ (b) $\begin{array}{r} 6\ 6 \\ -\ \dot{4}\ 8 \\ \hline 1\ 8 \end{array}$

(c) $\begin{array}{r} 7\ 4 \\ -\dot{6}\ 9 \\ \hline 0\ 5 \end{array}$ (d) $\begin{array}{r} 3\ 4\ 2 \\ -\ \dot{1}\ \dot{4}\ 3 \\ \hline 1\ 9\ 9 \end{array}$

(e) $\begin{array}{r} 5\ 2\ 4 \\ -\dot{2}\ \dot{6}\ 7 \\ \hline 2\ 5\ 7 \end{array}$ (f) $\begin{array}{r} 9\ 4\ 5 \\ -\ \dot{8}\ \dot{7}\ 6 \\ \hline 0\ 6\ 9 \end{array}$

(g) $\begin{array}{r} 4\ 1\ 6\ 2 \\ -\dot{2}\dot{5}\ \dot{3}\ 6 \\ \hline 1\ 6\ 2\ 6 \end{array}$ (h) $\begin{array}{r} 7\ 2\ 6\ 4 \\ -\ \dot{3}\ \dot{8}\ \dot{9}\ 7 \\ \hline 3\ 3\ 8\ 7 \end{array}$

(i) $\begin{array}{r} 1\ 2\ 4\ 5 \\ -\ \dot{9}\ \dot{7}\ 8 \\ \hline 2\ 6\ 7 \end{array}$

Sol.2. (a) $\begin{array}{r} 2\ 0\ 0 \\ -\dot{1}\ \dot{3}\ 2 \\ \hline 6\ 8 \end{array}$ (b) $\begin{array}{r} 5\ 0\ 0 \\ -\ \dot{3}\ \dot{0}\ 9 \\ \hline 1\ 9\ 1 \end{array}$

(c) $\begin{array}{r} 8\ 0\ 5 \\ -\dot{6}\ \dot{0}\ 8 \\ \hline 1\ 9\ 7 \end{array}$ (d) $\begin{array}{r} 1\ 7\ 0\ 0 \\ -\ \dot{9}\ \dot{7}\ 3 \\ \hline 7\ 2\ 7 \end{array}$

(e) $\begin{array}{r} 8\ 3\ 0\ 5 \\ -\dot{5}\ \dot{8}\ \dot{6}\ 1 \\ \hline 3\ 0\ 2\ 4 \end{array}$ (f) $\begin{array}{r} 4\ 0\ 0\ 0 \\ -\ \dot{2}\ \dot{7}\ \dot{3}\ 6 \\ \hline 1\ 2\ 6\ 4 \end{array}$

(g) $\begin{array}{r} 9\ 7\ 0\ 0 \\ -\dot{4}\ \dot{9}\ \dot{0}\ \dot{4} \\ \hline 4\ 7\ 9\ 6 \end{array}$ (h) $\begin{array}{r} 1\ 0\ 0\ 0 \\ -\quad \dot{8}\ \dot{5}\dot{4} \\ \hline 1\ 4\ 6 \end{array}$

(i) $\begin{array}{r} 9\ 0\ 0\ 0 \\ -\dot{3}\ \dot{8}\ \dot{9}\ 6 \\ \hline 5\ 1\ 0\ 4 \end{array}$

Sol.3.

	Number	Deviation
(a)	14	4
(b)	11	1
(c)	8	-2
(d)	9	-1
(e)	13	3
(f)	19	9
(g)	7	-3
(h)	6	-4

Sol.4. (a) 12×9
$= 12 \quad +2$
$\quad 9 \quad -1$
$= 9+2/(+2)\times(-1)$
$= 11/-2$
$= 10/10-2$
$= 10/8$
$= 108$

(d) 15×12
$= 15 \quad -5$
$\quad 12 \quad +2$
$= 12+5/(+5)\times(+2)$
$= 17/10$
$= 18/0$
$= 180$

(c) 13×17
$= 13 \quad +3$
$\quad 17 \quad +7$
$= 17+3/(+3)\times(+7)$
$= 20/21$
$= 22/1$
$= 221$

(d) 8×9
$= 8 \quad -2$
$\quad 9 \quad -1$
$= 9-2/(-2)\times(-1)$
$= 7/+2$
$= 72$

(e) 14×11
$= 14 \quad +4$
$\quad 11 \quad +1$
$= 11+4/(+4)\times(+1)$
$= 15/4$
$= 154$

(f) 9×16
$= \quad 9 \quad -1$
$\quad 16 \quad +6$
$= 16-1/(-1)\times(+6)$
$= 15/-6$
$= 14/10-6$
$= 14/4$
$= 144$

(g) 12×13
$= 12 \quad +2$
$\quad 13 \quad +3$
$= 13+2/(+2)\times(+3)$
$= 15/6$
$= 156$

(h) 13×10
$= 13 \quad +3$
$\quad 10 \quad +0$
$= 10-3/(+3)\times 0$
$= 13/0$
$= 130$

Sol.5. (a) 12×14
$= 12 \quad +2$
$\quad 14 \quad +4$
$= 14+2/(+2)\times(+4)$
$= 16/8$
$= 168$

(b) 11×16
$= 11 \quad +1$
$\quad 16 \quad +6$
$= 16+1/(+1)\times(\times 6)$
$= 17/6$
$= 176$

Sol.6. 13×15
$= 13 + 3$
$15 + 5$
$= 15 + 3/(+3) \times (+5)$
$= 18/5$
$= 19/5$
$= 195$

Sol.7. (a) $805 - 308 = 197$ (b) $800 - 543 = 257$

Sol.8. (a) Deviation of $6 = 6 - 10 = -4$
(b) Deviation of $9 = 9 - 10 = -1$
(c) Deviation of $14 = 14 - 10 = 4$

Sol.9. (a) Complementary digit of $4 = -6$
(b) Complementary digit of $6 = -4$
(c) Complementary digit of $12 = 2$

Sol.10. (a) 16×18
$= 16 + 6$
$12 + 8$
$= 18+6/(+6) \times (+8)$
$= 24/48$
$= 28/8$
$= 288$

(b) 14×16
$= 14 + 4$
$16 + 6$
$= 16+4/(+4) \times (+6)$
$= 20/24$
$= 22/4$
$= 244$

Chapter-6 Mutiples and Factors

Test Prep 6.1

Sol.1. 14, 36, 44, 48, 68, 86

Sol.2. 93, 95, 97, 99

Sol.3.

S.No.	Number	2	3	4	5	6	9	10
(a)	672	☺	☺	☺		☺		
(b)	39875				☺			
(c)	4606	☺						
(d)	9000	☺	☺	☺	☺	☺	☺	☺
(e)	16338	☺	☺			☺		
(f)	275430	☺	☺		☺	☺		☺
(g)	17622	☺						
(h)	9915		☺		☺			
(i)	20367		☺				☺	
(j)	2920	☺		☺	☺			☺

Sol.4. (a) In 7732, last three digits 732 is not divisible by 8. So, 7732 is not divisible by 8.
(b) In 82324, last three digits 324 is not divisible by 8. So, 324 is not divisible by 8.
(c) In 9800, last three digits 800 is divisible by 8. So, 9800 is divisible by 8.
(d) In 64246, last three digits 246 is divisible by 8. So, 246 is not divisible by 8.

Sol.5.

S.No.	Numbers	Sum of odd place digits	Sum of even place digits	Difference	Divisible by 11
(a)	19365	$5+3+1=9$	$6+9=15$	$15-9=6$	No
(b)	14331	$1+3+1=5$	$3+4=7$	$7-5=2$	No
(c)	559620	$0+6+5=11$	$2+9+5=16$	$16-11=5$	No
(d)	497365	$5+3+9=17$	$6+7+4=17$	$17-17=0$	Yes

Test Prep 6.2

Sol.4. (a) $36 \div 1 = 36, 36 \div 2 = 18, 36 \div 3 = 12,$
$36 \div 4 = 9, \ 36 \div 6 = 6, \ 36 \div 9 = 4,$
$36 \div 12 = 3, 36 \div 18 = 2, \ 36 \div 36 = 1$
Factors of $36 = 1, 2, 3, 4, 6, 9, 12, 18, 36$

(b) $48 \div 1 = 48, 48 \div 2 = 24, 48 \div 3 = 16,$
$48 \div 4 = 12, 48 \div 6 = 8, \ 48 \div 8 = 6,$
$48 \div 12 = 4, 48 \div 16 = 3, 48 \div 24 = 2,$
$48 \div 48 = 1$
Factors of $48 = 1, 2, 3, 4, 6, 8, 12, 16, 24, 48$

(c) $54 \div 1 = 54, 54 \div 2 = 27, 54 \div 3 = 18,$
$54 \div 6 = 9, \ 54 \div 18 = 3, 54 \div 27 = 2,$
$54 \div 54 = 1$
Factors of 54 = 1, 2, 3, 6, 9,18, 27, 54.

(d) $72 \div 1 = 72, 72 \div 2 = 36, 72 \div 3 = 24,$
$72 \div 4 = 12, 72 \div 6 = 12, 72 \div 12 = 6,$
$72 \div 18 = 4, 72 \div 24 = 3, 72 \div 36 = 2,$
$72 \div 72 = 1$
Factors of 72 = 1, 2, 3, 4, 6, 12,18, 24, 36, 72.

Sol.2. (a) First five multiples of 14 = 14×1, 14×2, 14×3, 14×4, 14×5 = 14, 28, 42, 56, 70

(b) First five multiples of 15 = 15×1, 15×2, 15×3, 15×4, 15×5 = 15, 30, 45, 60, 75

(c) First five multiples of 25 = 25×1, 25×2, 25×3, 25×4, 25×5 = 25, 50, 75, 100, 125

(d) First five multiples of 32 = 32×1, 32×2, 32×3, 32×4, 32×5 = 32, 64, 96, 128, 160

Sol.3. (a) Multiples of 9 = 9, 18, 27.....
So, 21 is not a multiple of 9.
Thus, false.

(b) Multiples of 8 = 8, 16, 24, 32, 40, 48, 56, 64, 72
∴ True.

(c) Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39
∴ False.

(d)
$$\begin{array}{r} 4\overline{)54}\,\overline{)13} \\ -4 \\ \hline 14 \\ -12 \\ \hline 2 \end{array}$$

On dividing 54 by 4, we get remainder as 2.
So, 4 does not divide 54 completely. Thus, 54 is not a factor of 4.

(e) True

(f) True

Sol.4. Prime numbers = 11, 67, 19, 83, 89

Sol.5. Composite numbers = 51, 81, 87, 78, 93

Sol. 6. (a) Prime numbers between 5 and 35 = 7, 11, 13, 17, 19, 23, 29, 31

(b) Prime numbers between 35 and 65= 37, 41,43, 47, 53, 59, 61

(c) Prime numbers between 50 and 80 = 53, 59, 61, 67, 71, 73,79

(d) Prime numbers between 70 and 99 = 71, 73, 79, 83, 89, 97

Sol. 7. (a) Composite numbers between 60 and 80 = 62, 63, 64, 65, 66, 68, 69, 70, 72, 74, 75, 76, 77, 78

(b) Composite numbers between 20 and 40 = 21, 22,24,25,26,27,28,30,32,33,34,35,36,38,39

(c) Composite numbers between 70 and 90 = 72, 76, 77, 78, 80, 81, 82, 84, 85, 86, 87, 88

(d) Composite numbers between 80 and 100 = 81, 82, 84, 85, 86, 87, 88, 90, 91, 92, 93, 94, 95, 96, 98, 99

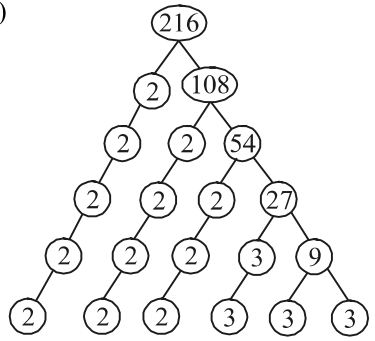
Sol.8. (a) 1 (b) 2 (c) 4 (d) 2 (e) 2

Sol.9. Twin prime between 1 and 50 = (3, 5), (5, 7), (9, 11), (11, 13), (17, 19), (41, 43)

Sol.10. Six consecutive composite numbers less than 100 = 93, 94, 95, 96, 98, 99

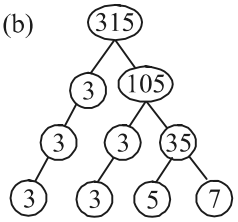
Test Prep 6.3

Sol.1. (a)



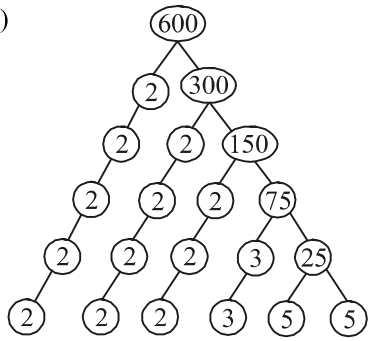
$216 = 2 \times 2 \times 2 \times 3 \times 3 \times 3$

(b)



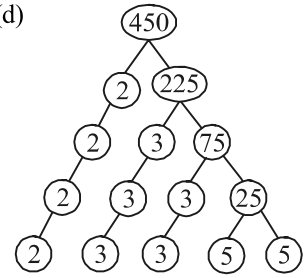
$315 = 3 \times 3 \times 5 \times 7$

(c)



$600 = 2 \times 2 \times 2 \times 3 \times 5 \times 5$

(d)



$450 = 2 \times 3 \times 3 \times 5 \times 5$

Sol.2. (a)

2	120
2	60
2	30
3	15
5	5
	1

$120 = 2 \times 2 \times 2 \times 3 \times 5$

(b)

2	420
2	210
3	105
5	35
7	7
	1

$420 = 2 \times 2 \times 3 \times 5 \times 7$

(c)

2	168
2	84
2	42
3	21
7	7
	1

$168 = 2 \times 2 \times 2 \times 3 \times 7$

(d)

2	780
2	364
2	182
7	91
13	13
	1

$728 = 2 \times 2 \times 2 \times 7 \times 13$

Sol.3. (a) Multiples of 2 = 2, 4, 6, 8, 10, 12, 14, 16, 18 ....
Multiples of 3= 3, 6, 9, 12, 15, 18,.....
First three Common multiples of 2 and 3 are 6, 12, 18,.

(b) Multiples of 4 = 4, 8, 12, 16, 20, 24 ....
Multiples of 8= 8, 16, 24.....
First three Common multiples of 4 and 8 are 8, 16, 24.

(c) Multiples of 9 = 9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99, 108, ...
Multiples of 12 = 12, 24, 36, 48, 60, 72, 84, 96, 108,.....
First three Common multiples of 9 and 12 are 36, 72, 108.

Sol.4. (a) Multiples of 2 = 2, 4, 6, 8, 10, 12, ...
Multiples of 3 = 3, 6, 9, 12,.....
LCM = 6

(b) Multiples of 4 = 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60,.....
Multiples of 5 = 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60,.....
Multiples of 12 =12, 24, 36, 48, 60,.....
LCM = 60

(c) Multiples of 6 = 6, 12, 18, 24, 30, 36, 42, 54, 60, 66, 72, 78, 84, 90,.....
Multiples of 15 = 15, 30, 45, 60, 75, 90,.....
Multiples of 9 = 9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99,.....
LCM= 90

Sol.4. (a)

2	28
2	14
7	7
	1

2	84
2	42
3	21
7	7
	1

Here, $28 = 2 \times 2 \times 7 = 2^2 \times 7$

$84 = 2 \times 2 \times 3 \times 7 = 2^2 \times 3 \times 7$

LCM = $2^2 \times 3 \times 7 = 4 \times 3 \times 7 = 12 \times 7 = 84$

(b)

5	25
5	5
	1

2	30
3	15
5	5
	1

Here, $25 = 5 \times 5 = 5^2$

$30 = 2 \times 3 \times 5$

LCM = $5^2 \times 2 \times 3 = 25 \times 2 \times 3 = 150$

(c)

2	78
3	39
13	13
	1

2	126
3	63
3	21
7	7
	1

Here, $78 = 2 \times 3 \times 13$

$126 = 2 \times 3 \times 3 \times 7 = 2 \times 3^2 \times 7$

LCM= $2 \times 3^2 \times 7 \times 13 = 2 \times 9 \times 91 = 18 \times 91 = 1638$

(d)

3	27
3	9
3	3
	1

2	54
3	27
3	9
3	9
	1

2	90
3	45
3	15
5	5
	1

Here, $27 = 3 \times 3 \times 3 = 3^2$

$54 = 2 \times 3 \times 3 \times 3 = 2 \times 3^2$

$90 = 2 \times 3 \times 3 \times 5 = 2 \times 3^2 \times 5$

LCM = $3^2 \times 2 \times 5 = 27 \times 10 = 270$

(e)

2	104
2	52
2	26
13	13
	1

2	128
2	64
2	32
2	16
2	8
2	4
2	2
	1

2	176
2	88
2	44
2	22
11	11
	1

Here, $104 = 2 \times 2 \times 2 \times 13 = 2^3 \times 13$

$128 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 2^7$

$176 = 2 \times 2 \times 2 \times 2 \times 11 = 2^4 \times 11$

$LCM = 2^7 \times 11 \times 13 = 18304$

(f)

3 | 405
3 | 135
3 | 45
3 | 15
5 | 5
| 1

3 | 783
3 | 261
3 | 87
29 | 29
| 1

3 | 513
3 | 171
3 | 57
19 | 19
| 1

Here, $405 = 3 \times 3 \times 3 \times 3 \times 5 = 3^4 \times 5$

$783 = 3 \times 3 \times 3 \times 29 = 3^3 \times 29$

$513 = 3 \times 3 \times 3 \times 19 = 3^3 \times 19$

$LCM = 3^4 \times 5 \times 29 \times 19 = 223155$

Sol.2. (a)

2 | 72, 88
2 | 36, 44
2 | 18, 22
| 9, 11

$LCM = 2 \times 2 \times 2 \times 9 \times 11 = 792$

(b)

2 | 144, 249
| 48, 83

$LCM = 3 \times 48 \times 83 = 11952$

(c)

2 | 180, 450
3 | 90, 225
3 | 30, 75
5 | 10, 25
| 2, 5

$LCM = 2 \times 3 \times 3 \times 5 \times 2 \times 5 = 900$

(d)

2 | 60, 72, 96
2 | 30, 36, 48
2 | 15, 18, 24
3 | 15, 9, 12
| 5, 3, 4

$LCM = 2 \times 2 \times 2 \times 3 \times 5 \times 3 \times 4 = 1440$

(e)

3 | 441, 630, 945
3 | 147, 210, 315
7 | 49, 70, 105
| 7, 10, 15

$LCM = 3 \times 3 \times 7 \times 7 \times 10 \times 15 = 66150$

Test Prep 6.4

Sol.1. (a) Factors of 12 = 1, 2, 3, 4, 6, 12
Factors of 15 = 1, 3, 5, 15
Common factors = 1, 3
HCF = 3

(b) Factors of 16 = 1, 2, 4, 8, 16
Factors of 24 = 1, 2, 3, 4, 6, 8, 12, 24
Common factors = 1, 2, 4, 8
HCF = 8

(c) Factors of 18 = 1, 2, 3, 6, 9, 18
Factors of 27 = 1, 3, 9, 27
Common factors = 1, 3, 9
HCF = 9

(d) Factors of 20 = 1, 2, 4, 5, 10, 20
Factors of 25 = 1, 5, 25
Factors of 30 = 1, 2, 3, 5, 6, 10, 15, 30
Common factors = 1, 5
HCF = 5

(e) Factors of 16 = 1, 2, 4, 5, 10, 20
Factors of 32 = 1, 2, 4, 8, 16, 32
Factors of 48 = 1, 2, 3, 4, 6, 8, 12, 16, 24, 48
Common factors = 1, 2, 4, 8, 16
HCF = 16

(f) Factors of 21 = 1, 3, 7, 21
Factors of 24 = 1, 2, 3, 4, 6, 8, 12, 24
Factors of 36 = 1, 2, 3, 4, 6, 9, 12, 18, 36
Common factors = 1, 3
HCF = 3

Sol.2. (a)

2 | 36
2 | 18
3 | 9
3 | 3
| 1

2 | 54
3 | 27
3 | 9
3 | 3
| 1

We have, $36 = 2 \times 2 \times 3 \times 3$

$54 = 2 \times 3 \times 3 \times 3$

Common factors = 2, 3, 3

Product = $2 \times 3 \times 3 = 18$, HCF = 18

(b)

2 | 112
2 | 56
2 | 28
2 | 14
7 | 7
| 1

2 | 114
2 | 56
2 | 28
2 | 14
7 | 7
| 1

We have, $112 = 2 \times 2 \times 2 \times 2 \times 7$

$114 = 2 \times 3 \times 19$

Common factors = 2, HCF = 2

(c)

3 | 135
3 | 45
3 | 15
5 | 5
| 1

2 | 180
2 | 90
3 | 45
3 | 15
5 | 5
| 1

We have, $135 = 3 \times 3 \times 3 \times 5$

$180 = 2 \times 2 \times 3 \times 3 \times 5$

Common factors = 3, 3, 5

Product = $3 \times 3 \times 5 = 45$

HCF = 15

(d)

2	100
2	50
5	25
5	5
	1

2	200
2	100
3	50
5	25
5	5
	1

2	300
2	150
3	75
5	25
5	5
	1

We have, $100 = 2 \times 2 \times 5 \times 5$

$200 = 2 \times 2 \times 2 \times 5 \times 5$

$300 = 2 \times 2 \times 3 \times 5 \times 5$

Common factors = 2, 2, 5, 5

Product = $2 \times 2 \times 5 \times 5 = 100$

HCF = 100

(e)

2	42
3	21
7	7
	1

3	63
3	21
7	7
	1

3	105
5	35
7	7
	1

We have, $42 = 2 \times 3 \times 7$

$63 = 3 \times 3 \times 7$

$105 = 3 \times 5 \times 7$

Common factors = 3, 7

Product = $3 \times 7 = 21$

HCF = 21

(f)

2	144
2	72
2	36
2	18
3	9
3	3
	1

2	180
2	90
3	45
3	15
5	5
	1

2	252
2	126
3	63
3	21
7	7
	1

We have, $144 = 2 \times 2 \times 2 \times 2 \times 3 \times 3$

$180 = 2 \times 2 \times 3 \times 3 \times 5$

$252 = 2 \times 2 \times 3 \times 3 \times 7$

Common factors = 2, 2, 3, 3

Product = $2 \times 2 \times 3 \times 3 = 36$

HCF = 36

Sol.3. (a) We divide 120 by 96.

$$\begin{array}{r} 96\overline{)120}\,1 \\ -96 \\ \hline 24\overline{)96}\,1 \\ -96 \\ \hline 0 \end{array}$$

Last division = 24

HCF = 24

(b) We divide 456 by 360.

$$\begin{array}{r} 360\overline{)456}\,1 \\ -360 \\ \hline 96\overline{)360}\,3 \\ -288 \\ \hline 72\overline{)96}\,1 \\ -72 \\ \hline 24\overline{)72}\,3 \\ -72 \\ \hline 0 \end{array}$$

Last division = 24

HCF = 24

(c) We divide 540 by 225.

$$\begin{array}{r} 225\overline{)540}\,2 \\ -450 \\ \hline 90\overline{)225}\,2 \\ -180 \\ \hline 45\overline{)90}\,2 \\ -90 \\ \hline 0 \end{array}$$

Last division = 45

HCF = 45

(d) First we find the HCF of 540 by 225.

$$\begin{array}{r} 45\overline{)105}\,2 \\ -90 \\ \hline 15\overline{)45}\,3 \\ -45 \\ \hline 0 \end{array}$$

HCF of 45 and 105 = 15

Now we find the HCF of 15 and 120.

$$\begin{array}{r} 15\overline{)120}\,8 \\ -120 \\ \hline 0 \end{array}$$

HCF of 15 and 120 = 15

Thus, HCF of 15, 105 and 120 = 15

(e) First we find the HCF of 690 and 966.

$$\begin{array}{r} 690\overline{)966}\,1 \\ -690 \\ \hline 276\overline{)690}\,2 \\ -552 \\ \hline 138\overline{)552}\,4 \\ -552 \\ \hline 0 \end{array}$$

HCF of 690 and 966 = 138

Now we find the HCF of 138 and 1150.

$$\begin{array}{r|l} 138 & 1150 \\ -1104 & 8 \\ \hline 46 & 138 \\ -138 & 3 \\ \hline 0 & \end{array}$$

HCF of 138 and 1150 = 46

Thus, HCF of 690, 966 and 1150 = 46

(f) First we find the HCF of 1085 and 1435.

$$\begin{array}{r|l} 1085 & 1435 \\ -1085 & 1 \\ \hline 350 & 1085 \\ -1050 & 3 \\ \hline 35 & 350 \\ -35 & 10 \\ \hline 00 & \\ -00 & \\ \hline 0 & \end{array}$$

HCF of 1085 and 1435 = 35

Now, we find the HCF of 35 and 2135.

$$\begin{array}{r|l} 35 & 2135 \\ -210 & 61 \\ \hline 35 & \\ -35 & \\ \hline 0 & \end{array}$$

HCF of 35 and 2135 = 35

Thus, HCF of 1085, 1435 and 2135 = 35

Test Prep 6.5

Sol.1. The length of the tape would be the HCF of 12 m, 16 m and 18 m.

HCF of 12 and 16.

$$\begin{array}{r|l} 12 & 16 \\ -12 & 8 \\ \hline 4 & 12 \\ -12 & 3 \\ \hline 0 & \end{array}$$

And HCF of 4 and 18.

$$\begin{array}{r|l} 4 & 18 \\ -16 & 4 \\ \hline 2 & 4 \\ -4 & 3 \\ \hline 0 & \end{array}$$

HCF of 4 and 18 = 2

Thus, the last length of the tape that 12m, 16 m and 18 m is 2 m.

Sol.2. LCM of 15, 25, 40 and 50 $= 2 \times 5 \times 5 \times 3 \times 4 = 600$

2	15, 25, 40, 50
5	15, 25, 20, 25
5	3, 5, 4, 5
	3, 1, 4, 1

Since,

$$600 \text{ seconds} = \frac{600}{60} \text{ minute}$$

$$= 10 \text{ minutes}$$

They will meet again at the same point after 10 minutes.

Sol.4. LCM of 12, 18, and 30 $= 2 \times 3 \times 2 \times 3 \times 5 = 180$

Since, 180 Seconds $= \frac{180}{60}$ minutes = 3 minutes

Thus after 3 minutes, they will again change .

Sol.5. Since,

First number × Second number = HCF × LCM

21 × second number = 84 × 3

$$\text{second number} = \frac{84 \times 3}{21} = 12$$

Sol.6. Since,

Product of numbers = HCF = × LCM

486 = HCF = × 54

$$\text{HCF} = \frac{486}{54} = 9$$

Maths Skills

Sol.1. 19, 21, 49, 13

Sol.2. 2, 11, 59

Sol.3. 12, 24,

Sol.4. 14, 21, 28

Sol.5. Three multiples of 4 greater than 25 = 28, 32, 36

Sol.6. (a)

2	2, 5
5	1, 5
	1, 1

LCM = 2×5 = 10

(b)

2	8, 12
2	4, 6
2	2, 3
	1, 3

LCM = 2 × 2 × 3 = 24

(c)

3	6, 9, 15
	2, 3, 5

LCM = 3 × 2 × 3× 5 = 90

Sol.7. (a) Factors of 7 = 1, 7

(b) Factors of 9 = 1, 3, 9

(c) Factors of 16 = 1, 2, 4, 8, 16

(d) Factors of 25 = 1, 5, 25

(e) Factors of 48 = 1, 2, ,3, 4, 6, 8, 12, 16, 24, 48

(f) Factors of 63 = 1, 3, 7, 9, 21, 63

Sol.8. (a) Factors of 8 = 1, 2, 4, 8
Factors of 12 = 1, 2, 3, 4, 6, 12
Common Factor = 1, 2, 4
(b) Factors of 10 = 1, 2, 5, 10
Factors of 20 = 1, 2, 4, 5, 10, 20
Common Factor = 1, 2, 5, 10
(c) Factors of 7 = 1, 7
Factors of 16 = 1, 2, 4, 8, 16
Common Factor = 1
(d) Factors of 18 = 1, 2, ,3, 6, 9, 18
Factors of 32 = 1, 2, 4, 8, 16, 32
Common Factor = 1, 2

Sol.9. (a) Factors of 21 = 1, 3, 7, 21
Factors of 28 = 1, 2, 4, 7, 14, 28
Highest Common Factor = 7
(b) Factors of 12 = 1, 2, 3, 4, 6, 12
Factors of 18 = 1, 2, 3, 6, 9, 18
Factors of 24 = 1, 2, 3, 4, 6, 8, 12, 24
Highest Common Factor = 6
(c) Factors of 15 = 1, 3, 5, 15
Factors of 27 = 1, 3, 9, 27
Factors of 36 = 1, 2, 3, 4, 6, 9, 12, 18, 36
Highest Common Factor = 3

Sol.10. The greatest number is the HCF of 45 and 75.

45) 75 (1
 − 45
 30) 45 (1
 − 30
 15) 30 (2
 − 30
 0

HCF = 15
Thus, the greatest number is 15.

Sol.11. The greatest measurement of a container is the HCF of 20 litre and 30 litre.

20) 30 (1
 − 30
 10) 20 (1
 − 20
 0

Thus, measurement of a container is 10 litre.

HOTS

Sol.1.

2	2, 3, 4, 5, 6
3	1, 3, 2, 5, 3
	1, 1, 2, 5, 1

LCM = 2 × 3 × 2 × 5 = 60
Thus, the numbers are 60 and 120.

Sol.2. 123654

Maths Olympiad

Tick (✓) the Correct answer.

Sol.1. (b) 1

Sol.2. (b) 5248 because sum of its digits = 5 + 2 + 4 + 8 = 19, which is not divisible by 3.

Sol.3. (a) twin primes

Sol.4. (a) 25

Sol.5.
36) 84 (2
 − 72
 12) 36 (3
 −30
 0

HCF = 12 (c)

Sol.6.

2	24, 36, 40
2	12, 18, 20
2	6, 9, 10
3	3, 9, 5
	1, 3, 5

LCM = 2 × 2 × 2 × 3 × 5 = 360
∴ (c)

Sol.7. (b) 18, 25; because these numbers do not have any common factor.

Chapter-7 Fractions

Test Prep 7.1

Sol.1. (a) mixed fractions (b) proper fractions
(c) unit fractions (d) improper fractions

Sol.2. (a)
3) 7 (2
 − 6
 1

$\frac{7}{3} = 2\frac{1}{3}$

(b)
7) 80 (11
 − 7
 10
 − 7
 3

$\frac{80}{7} = 11\frac{3}{7}$

(c)
5) 41 (8
 − 40
 1

$\frac{41}{5} = 8\frac{1}{5}$

(d)
88) 91 (1
 − 88
 3

$\frac{91}{88} = 1\frac{3}{88}$

Sol.3. (a) $5\frac{2}{9} = \frac{5 \times 9 + 2}{9} = \frac{45 + 2}{9} = \frac{47}{9}$

(b) $8\frac{1}{8} = \frac{8 \times 8 + 1}{8} = \frac{64 + 1}{8} = \frac{65}{8}$

(c) $7\frac{2}{5} = \frac{7 \times 5 + 2}{5} = \frac{35 + 2}{5} = \frac{37}{5}$

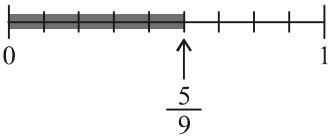
(d) $11\frac{1}{13} = \frac{11 \times 13 + 1}{13} = \frac{143 + 1}{13} = \frac{144}{13}$

Sol.4. (a) Unlike fractions (b) Like fractions
(c) Unlike fractions (d) Like fractions

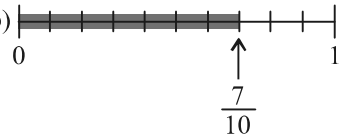
Sol.5. (a) Unlike fractions (b) Unlike fractions
(c) Like fractions (d) Like fractions

Sol.6. (a) $\frac{3}{5}$ (b) $\frac{8}{12}$
(c) $1\frac{4}{5}$ (d) $3\frac{1}{3}$

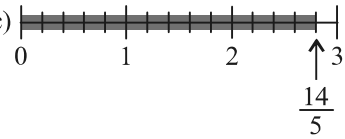
Sol.7. (a)



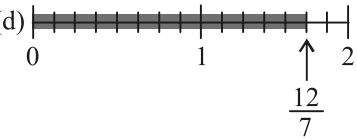
(b)



(c)



(d)



Test Prep. 7.2

Sol.1. (a) $\frac{7}{9}=\frac{7\times2}{9\times2}=\frac{14}{18}$

$\frac{7}{9}=\frac{7\times3}{9\times3}=\frac{21}{27}$

$\frac{7}{9}=\frac{7\times4}{9\times4}=\frac{28}{36}$

Three fractions equivalent to $\frac{7}{9}$ are $\frac{14}{18}, \frac{21}{27}$ and $\frac{28}{36}$.

(b) $\frac{2}{7}=\frac{2\times2}{7\times2}=\frac{4}{14}$

$\frac{2}{7}=\frac{2\times3}{7\times3}=\frac{6}{21}$

$\frac{2}{7}=\frac{2\times4}{7\times4}=\frac{8}{28}$

Three fractions equivalent to $\frac{2}{7}$ are $\frac{4}{14}, \frac{6}{21}$ and $\frac{8}{28}$.

(c) $\frac{50}{75}=\frac{50\div5}{75\div5}=\frac{10}{15}$

$\frac{50}{75}=\frac{50\div25}{75\div25}=\frac{2}{3}$

$\frac{50}{75}=\frac{50\div2}{75\div2}=\frac{100}{150}$

Three fractions equivalent to $\frac{50}{75}$ are $\frac{10}{15}, \frac{2}{3}$ and $\frac{100}{150}$.

(d) $\frac{9}{12}=\frac{9\times2}{12\times2}=\frac{18}{24}$

$\frac{9}{12}=\frac{9\times3}{12\times3}=\frac{27}{36}$

$\frac{9}{12}=\frac{9\times4}{12\times4}=\frac{36}{48}$

Three fractions equivalent to $\frac{9}{12}$ are $\frac{18}{24}, \frac{27}{36}$ and $\frac{36}{48}$.

(e) $\frac{11}{13}=\frac{11\times2}{13\times2}=\frac{22}{26}$

$\frac{11}{13}=\frac{11\times3}{13\times3}=\frac{33}{39}$

$\frac{11}{13}=\frac{11\times4}{13\times4}=\frac{44}{52}$

Three fractions equivalent to $\frac{11}{13}$ are $\frac{22}{26}, \frac{33}{39}$ and $\frac{44}{52}$.

Sol.2. (a) $\frac{1}{5}=\frac{2}{10}=\frac{3}{10}=\frac{4}{20}=\frac{4}{25}=\frac{6}{30}$

(b) $\frac{2}{7}=\frac{4}{14}=\frac{6}{21}=\frac{8}{28}=\frac{10}{35}=\frac{12}{42}$

(c) $\frac{4}{5}=\frac{8}{10}=\frac{12}{15}=\frac{16}{20}=\frac{20}{25}=\frac{24}{30}$

Sol.3. (a) Here, we have to multiply 2 by 8 to get 16. We multiply 5 by 8 also.

$$\frac{2}{5}=\frac{2\times 8}{5\times 8}=\frac{16}{40}$$

So, $\frac{2}{5}=\frac{16}{\boxed{40}}$

(b) $\frac{4}{9}=\frac{4\times 5}{9\times 5}=\frac{20}{45}$

So, $\frac{4}{9}=\frac{\boxed{20}}{45}$

(c) $\frac{12\times 5}{13\times 5}=\frac{60}{65}$

So, $\frac{60}{\boxed{65}}=\frac{12}{13}$

(d) $\frac{3}{4}=\frac{3\times 9}{4\times 9}=\frac{27}{36}$

So, $\frac{\boxed{27}}{36}=\frac{3}{4}$

(e) $\frac{9}{27}=\frac{9\div 9}{27\div 9}=\frac{1}{3}$

So, $\frac{9}{27}=\frac{\boxed{1}}{3}$

(f) $\frac{9}{24}=\frac{9\div 3}{24\div 3}=\frac{3}{8}$

$\frac{3}{\boxed{8}}=\frac{9}{24}$

Sol.4. (a) To get number 32, we multiply numerator 4 by 8 and we also multiply denominator 5 by 8.

$$\frac{4}{5}=\frac{4\times 8}{5\times 8}=\frac{32}{40}$$

(b) To get denominator 25, we multiply denominator by 5 and we also multiply numerator 4 by 5.

$$\frac{4}{5}=\frac{4\times 5}{5\times 5}=\frac{20}{25}$$

Sol.5. (a) We have, $\frac{2}{9}\times\frac{18}{81}$

$2\times 81=162$ and $9\times 18=162$

Since, both the products are equal, So $\frac{2}{9}$ and $\frac{18}{81}$ are equivalent.

(b) We have, $\frac{5}{7}\times\frac{35}{94}$

$5\times 94=470$ and $7\times 35=245$

Since, both the products are not equal, So, $\frac{5}{7}$ and $\frac{35}{94}$ are not equivalent.

(c) We have, $\frac{9}{11}\times\frac{11}{9}$

$9\times 9=81$ and $11\times 11=121$

Since, both the products are not equal, So $\frac{9}{11}$ and $\frac{11}{9}$ are not equivalent.

(d) We have, $\frac{1}{2}\times\frac{40}{80}$

$91\times 80=80$ and $2\times 40=80$

Since, both the products are equal, So $\frac{1}{2}$ and $\frac{40}{80}$ are equivalent.

(e) We have, $\frac{9}{7}\times\frac{18}{14}$

$9\times 14=126$ and $7\times 18=126$

Since, both the products are equal, So $\frac{9}{7}$ and $\frac{18}{14}$ are equivalent.

(f) We have, $\frac{14}{6}\times\frac{16}{24}$

$14\times 24=336$ and $6\times 16=96$

Since, both the products are not equal, So $\frac{14}{6}$ and $\frac{16}{24}$ are not equivalent.

Sol.6. (a) $\frac{16}{21}$ (b) $\frac{7}{15}$ (c) $\frac{9}{18}$ (d) $\frac{20}{64}$

Sol.7. (a) HCF of 14 and 34 = 2

$$\frac{14}{34} = \frac{14 \div 2}{34 \div 2} = \frac{7}{17}$$

$$\begin{array}{r|l} 14 \overline{)34} & 2 \\ -28 & \\ \hline 6 \overline{)14} & 2 \\ -12 & \\ \hline 2 \overline{)6} & 2 \\ -6 & \\ \hline 0 & \end{array}$$

(b) HCF of 18 and 45 = 9

$$\frac{18}{45} = \frac{18 \div 9}{18 \div 9} = \frac{2}{5}$$

$$\begin{array}{r|l} 18 \overline{)45} & 2 \\ -36 & \\ \hline 9 \overline{)18} & 2 \\ -18 & \\ \hline 0 & \end{array}$$

(c) HCF of 52 and 65 = 13

$$\frac{52}{65} = \frac{52 \div 13}{65 \div 13} = \frac{4}{5}$$

(d) HCF of 10 and 25 = 5

$$\frac{10}{25} = \frac{10 \div 5}{25 \div 5} = \frac{2}{5}$$

(e) HCF of 21 and 98 = 7

$$\frac{21}{98} = \frac{21 \div 7}{98 \div 7} = \frac{3}{14}$$

$$\begin{array}{r|l} 21 \overline{)98} & 4 \\ -84 & \\ \hline 14 \overline{)21} & 1 \\ -14 & \\ \hline 7 \overline{)14} & 2 \\ -14 & \\ \hline 0 & \end{array}$$

(f) HCF of 119 and 406 = 7

$$\frac{119}{406} = \frac{119 \div 7}{406 \div 7} = \frac{17}{58}$$

$$\begin{array}{r|l} 119 \overline{)406} & 3 \\ -357 & \\ \hline 49 \overline{)119} & 2 \\ -98 & \\ \hline 21 \overline{)49} & 2 \\ -42 & \\ \hline 7 \overline{)42} & 6 \\ -42 & \\ \hline 0 & \end{array}$$

Sol.8. (a) Suppose, $\frac{36}{40} = \frac{x}{10}$

By cross multiplication, we have

$x \times 40 = 36 \times 10$

$$x = \frac{360}{40} = \frac{36}{4} = 9$$

Suppose, $\frac{36}{60} = \frac{12}{y}$

By cross multiplication, we have

$36 \times y = 60 \times 12$

$$y = \frac{60 \times 12}{36} = \frac{60}{3} = 20$$

Suppose, $\frac{36}{60} = \frac{3}{z}$

By cross multiplication, we have

$36 \times z = 3 \times 60$

$$z = \frac{3 \times 60}{36} = \frac{60}{12} = 5$$

Thus, $\frac{36}{60} = \frac{\boxed{9}}{12} = \frac{12}{\boxed{20}} = \frac{3}{\boxed{5}}$

(b) Suppose, $\frac{36}{120} = \frac{3}{x}$

By cross multiplication, we have

$z \times 36 = 3 \times 120$

$$x = \frac{3 \times 120}{36} = \frac{120}{12} = 10$$

Suppose, $\frac{36}{120} = \frac{12}{y}$

By cross multiplication, we have

$36 \times y = 12 \times 120$

$$y = \frac{12 \times 120}{36} = \frac{120}{3} = 40$$

Suppose, $\frac{36}{120} = \frac{z}{20}$

By cross multiplication, we have

$z \times 120 = 36 \times 20$

$$z = \frac{36 \times 20}{120} = \frac{36}{6} = 6$$

Thus, $\frac{36}{120} = \frac{3}{10} = \frac{12}{40} = \frac{\boxed{6}}{20}$

Test Prep 7.3

Sol.1. (a) Here, denominators are same.

Since, $3 > 1$,

So, $\frac{3}{5} > \frac{1}{5}$

(b) Here, denominators are same.

Since, $4 > 3$,

So, $\frac{4}{9} > \frac{3}{9}$

(c) Here, denominators are same.

Since, $5 > 3$,

So, $\frac{5}{7} > \frac{3}{7}$

(d) Here, denominators are same.

Since, $11 > 8$,

So, $\frac{11}{21} > \frac{8}{21}$

Sol.2. (a) LCM of and $6 = 30$

Now, we make the denominators 30.

$$\frac{3}{5} = \frac{3\times 6}{5\times 6} = \frac{18}{30}$$

and $\frac{1}{6} = \frac{1\times 5}{6\times 5} = \frac{5}{30}$

Here, denominators are same.

Since, $5 > 18$, So $\frac{5}{30} < \frac{18}{30}$

Thus, $\frac{1}{6} < \frac{3}{5}$

(b) Here, denominators are same.

Since, $12 > 10$, So $\frac{8}{12} < \frac{8}{10}$

(c) Here, denominators are same.

Since, $7 > 5$, So $\frac{6}{7} < \frac{6}{5}$

(d) Here, denominators are same.

Since, $8 > 17$, So $\frac{8}{9} < \frac{17}{9}$

Sol.3. (a) Here, denominators are same.

Since, $11 < 13$, So $\frac{5}{11} > \frac{5}{13}$

(b) Here, denominators are same.

Since, $8 > 7$, So $\frac{8}{25} > \frac{7}{25}$

(c) L.C.M. of 13 and $11 = 143$

Now, we make the denominators 143.

$$\frac{11}{13} = \frac{11\times 11}{13\times 11} = \frac{121}{143}$$

and $\frac{13}{11} = \frac{13\times 13}{11\times 13} = \frac{169}{143}$

Here, denominators are same.

Since, $169 > 121$, So $\frac{169}{143} > \frac{121}{143}$

Thus, $\frac{13}{11} > \frac{11}{13}$

(d) Here, denominators are same.

Since $81 > 49$, So $\frac{81}{127} > \frac{49}{127}$

Sol.4. (a) By cross multiplication, we have $\frac{2}{9} \times \frac{11}{15}$

$2 \times 15 = 30$ and $11 \times 9 = 99$

Since, $30 < 90$ So $\frac{2}{9} < \frac{11}{15}$

(b) Here , $5\frac{1}{6} = \frac{5\times 6\times 1}{6} = \frac{30+1}{6} = \frac{31}{6}$

By cross multiplication, we have $\frac{31}{6} \times \frac{21}{4}$

$31 \times 4 = 124$ and $6 \times 21 = 126$

Since, $124 < 126$, So $\frac{31}{6} < \frac{21}{4}$

Thus, $5\frac{1}{6} < \frac{21}{4}$

(c) Here, denominators are same.

Since,$13 > 12$ So $\frac{13}{23} > \frac{12}{23}$

(d) Here, $2\frac{3}{11} = \frac{2\times 11\times 3}{11} = \frac{22+3}{11} = \frac{25}{11}$

and $3\frac{3}{8} = \frac{3\times 8\times 3}{8} = \frac{24+3}{8} = \frac{27}{8}$

By cross multiplication, we have $\frac{25}{11} \times \frac{27}{8}$

$25 \times 8 = 200$ and $11 \times 27 = 297$

Since, $200 < 297$, So $\frac{25}{11} < \frac{27}{8}$

Thus, $2\frac{3}{11} < 3\frac{3}{8}$

Sol.5. (a) Here, $\frac{2}{3}$ and $\frac{21}{20}$

By cross multiplication, we have $\frac{2}{3} \times \frac{21}{20}$

$2 \times 20 = 40$ and $3 \times 21 = 63$

Since, $40 < 63$, So $\frac{2}{3} < \frac{21}{20}$

(b) Here, $5\frac{1}{6} = \frac{5 \times 6 \times 1}{6} = \frac{31}{6}$

By cross multiplication, we have $\frac{31}{6} \times \frac{21}{4}$

$31 \times 4 = 124$ and $21 \times 6 = 126$

Since, $124 < 126$, So, $\frac{31}{6} < \frac{21}{4}$

Thus, $5\frac{1}{6} < \frac{21}{4}$

(c) Here, $4\frac{2}{7} = \frac{4 \times 7 \times 2}{7} = \frac{28+2}{7} = \frac{30}{7}$

By cross multiplication, we have $\frac{31}{7} \times \frac{13}{3}$

$30 \times 3 =$ and $13 \times 7 = 91$

Since, $90 < 91$, So $\frac{30}{7} < \frac{13}{3}$

Thus, $4\frac{2}{7} < \frac{13}{3}$

(d) Thus, $2\frac{4}{5} = \frac{2 \times 5 + 4}{5} = \frac{14}{5}$

and $2\frac{4}{13} = \frac{2 \times 13 + 4}{7} = \frac{30}{13}$

By cross multiplication, we have $\frac{14}{5} \times \frac{30}{13}$

$14 \times 13 = 182$ and $30 \times 5 = 150$

Since, $182 > 150$, So $\frac{14}{5} > \frac{30}{13}$

Thus, $2\frac{4}{5} > 2\frac{4}{13}$

Sol.6. (a) Here, $3\frac{1}{5} = \frac{3 \times 5 + 1}{5} = \frac{16}{5}$

Here, we see both the rational numbers are equal.

Thus, $3\frac{1}{5} = \frac{16}{5}$

(b) By cross multiplication, we have $\frac{5}{13} \times \frac{21}{26}$

$5 \times 26 = 130$ and $13 \times 21 = 273$

Since, $130 < 273$, So $\frac{5}{13} \leq \frac{21}{26}$

(c) By cross multiplication, we have $\frac{5}{28} \times \frac{4}{21}$

$5 \times 21 = 105$ and $28 \times 4 = 112$

Since, $105 < 112$, So $\frac{5}{28} \leq \frac{4}{21}$

(d) Here, $1\frac{6}{9} = \frac{1 \times 9 + 6}{9} = \frac{15}{9}$

By cross multiplication, we have $\frac{12}{3} \times \frac{15}{9}$

$12 \times 9 = 108$ and $15 \times 3 = 45$

Since, $108 > 45$, So $\frac{12}{3} \geq \frac{15}{9}$

Thus, $\frac{12}{3} \geq \frac{16}{9}$

Sol.7. (a) LCM of $4, 6, 3, 2 = 2 \times 2 \times 3 \times = 12$

First, we find the equivalent fractions with denominators 12.

2	4, 6, 3, 2
2	2, 3, 3, 1
3	1, 3, 3, 1
	1, 1, 1,1

$= \frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}$

$= \frac{5}{6} = \frac{5 \times 2}{6 \times 2} = \frac{10}{12}$

$= \frac{2}{3} = \frac{2 \times 4}{3 \times 4} = \frac{8}{12}$

$= \frac{1}{2} = \frac{1 \times 6}{2 \times 6} = \frac{6}{12}$

Here, denominators are same and $6 < 8 < 9 < 10$

$= \frac{6}{12} < \frac{8}{12} < \frac{9}{12} < \frac{10}{12}$

$= \frac{1}{2} < \frac{2}{3} < \frac{3}{4} < \frac{5}{6}$

Thus, the ascending order is $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$.

(b) LCM of $8, 6, 10 = 2 \times 2 \times 2 \times 3 \times 5 = 120$

First we find rhe equivalent fractions with denominators 120.

2	8, 6, 10
2	4, 3, 5
2	2, 3, 5
3	1, 3, 5
5	1, 1, 5
	1, 1, 1

$$\frac{15}{8} = \frac{15 \times 15}{8 \times 15} = \frac{225}{120}$$

$$\frac{25}{6} = \frac{25 \times 20}{6 \times 20} = \frac{500}{120}$$

$$3\frac{7}{10} = \frac{37}{10} = \frac{37 \times 12}{10 \times 12} = \frac{444}{120}$$

Here, denominators are same and $225 < 444 < 500$

$$\frac{225}{120} < \frac{444}{120} < \frac{500}{120}$$

$$\frac{15}{8} < 3\frac{7}{10} < \frac{25}{6}$$

Thus, the ascending order is $\frac{15}{8}, 3\frac{7}{10}, \frac{25}{6}$.

Sol.8. (a) LCM of $9, 12, 3, 15 = 2 \times 2 \times 3 \times 3 \times 5 = 180$

First, we find the equivalent fractions with denominator 180.

2	9, 12, 3, 15
2	9, 6, 3, 15
3	9, 3, 3,15
3	1, 3, 5
5	1, 1, 5
	1, 1, 1

$$\frac{5}{9} = \frac{5 \times 20}{9 \times 20} = \frac{100}{180}$$

$$\frac{3}{12} = \frac{3 \times 15}{12 \times 15} = \frac{45}{180}$$

$$\frac{1}{3} = \frac{1 \times 60}{3 \times 60} = \frac{60}{180}$$

$$\frac{4}{15} = \frac{4 \times 12}{15 \times 12} = \frac{48}{180}$$

Here, denominators are same and $100 > 48 > 45$

$$\frac{100}{180} > \frac{60}{180} > \frac{48}{180} > \frac{45}{180}$$

$$\frac{5}{9} > \frac{1}{3} > \frac{5}{15} > \frac{3}{12}$$

Thus, the descending order is

$$\frac{5}{9}, \frac{1}{3}, \frac{5}{15}, \frac{3}{12}$$

(b) LCM of $2, 3, 9, 12 = 36$

First we find the equivalent fractions with denominators 36.

2	2, 3, 9, 12
2	1, 3, 9, 6
3	1, 3, 9, 3
3	1, 1, 3, 1
	1, 1, 1, 1

$$1\frac{1}{2} = \frac{3}{2} = \frac{3 \times 18}{2 \times 18} = \frac{54}{36}$$

$$7\frac{2}{3} = \frac{23}{3} = \frac{23 \times 12}{3 \times 12} = \frac{276}{36}$$

$$2\frac{3}{9} = \frac{21}{9} = \frac{21 \times 4}{9 \times 12} = \frac{84}{36}$$

$$6\frac{9}{12} = \frac{81}{12} = \frac{81 \times 3}{12 \times 3} = \frac{243}{36}$$

Here, denominators are same and $276 > 243 > 84 > 54$

$$\frac{276}{36} > \frac{243}{36} > \frac{84}{36} > \frac{54}{36}$$

$$7\frac{2}{3} > 6\frac{9}{12} > 2\frac{3}{9} > 1\frac{1}{2}$$

Thus, the descending order is $7\frac{2}{3}, 6\frac{9}{12}, 2\frac{3}{9}, 1\frac{1}{2}$.

Test Prep 7.4

Sol.1. (a) $\frac{9}{11} + \frac{9}{11} = \frac{9+4}{11} = \frac{13}{11} = 1\frac{2}{11}$

(b) $\frac{2}{9} + \frac{7}{9} = \frac{2+7}{9} = \frac{9}{9} = 1$

(c) $\frac{3}{14} + \frac{7}{14} = \frac{3+7}{14} = \frac{10}{14} = \frac{5}{7}$

(d) $\frac{4}{17} + \frac{6}{17} = \frac{7}{17} = \frac{17}{17} = 1$

(e) $\frac{3}{42} + \frac{4}{42} = \frac{20}{42} = \frac{3+4+20}{42} = \frac{27}{42} = \frac{9}{14}$

(f) $\frac{18}{24} + \frac{22}{24} = \frac{32}{24} = \frac{18+22+32}{24} = \frac{72}{24} = 3$

Sol.2. (a) $\frac{11}{14}-\frac{4}{14}=\frac{14-4}{14}=\frac{7}{14}=\frac{1}{2}$

(b) $\frac{3}{5}-\frac{1}{5}=\frac{3-1}{5}=\frac{2}{5}$

(c) $\frac{4}{6}-\frac{2}{6}=\frac{4-2}{6}=\frac{2}{6}=\frac{2}{6}=\frac{1}{3}$

(d) $\frac{19}{22}-\frac{6}{22}=\frac{19-6}{22}=\frac{13}{22}$

(e) $\frac{23}{27}-\frac{5}{27}=\frac{23-5}{27}=\frac{18}{27}=\frac{2}{3}$

(f) $\frac{31}{40}-\frac{8}{40}=\frac{31-8}{40}=\frac{23}{40}$

Sol.3. (a) $\frac{2}{5}+\frac{21}{10}=\frac{2(10\div5)+21(10\div10)}{10}$

(LCM of 5 and 10 = 10)

$=\frac{2\times2+21\times1}{10}=\frac{4+21}{10}$

$=\frac{25}{10}=\frac{5}{2}=2\frac{1}{2}$

(b) $\frac{5}{2}+\frac{2}{7}=\frac{5(14\div7)+2(14\div7)}{14}$

(LCM of 2 and 7 = 14)

$=\frac{5\times7+2\times2}{14}=\frac{35+4}{14}$

$=\frac{39}{14}=2\frac{11}{14}$

(c) $\frac{3}{10}+\frac{7}{12}+\frac{1}{5}$

$=\frac{3(60\div10)+7(60\div12)+1(60\div5)}{60}$

(LCM of 10, 12 and 5 = 60)

$=\frac{3\times6+7\times5+1\times12}{60}=\frac{18+35+12}{60}$

$=\frac{65}{60}=\frac{13}{12}=1\frac{1}{12}$

(d) $2\frac{2}{3}+1\frac{11}{26}=\frac{2\times3\times2}{3}+\frac{1\times26+11}{26}$

$=\frac{8}{3}+\frac{37}{26}$

LCM of 3 and 26 = 78

$=\frac{8(78\div3)+37(78\div26)}{78}$

$=\frac{8\times26+37\times3}{78}=\frac{208+111}{78}$

$=\frac{319}{78}=4\frac{7}{78}$

(e) $2\frac{6}{7}=1\frac{2}{3}+\frac{1}{4}=\frac{20}{7}+\frac{5}{3}+\frac{1}{4}$

[LCM of 7, 3 and 4 = 84]

$=\frac{20\times12+5\times28+1\times21}{84}$

$=\frac{240\times140+21}{48}=\frac{401}{48}=4\frac{5}{8}$

(f) $3\frac{1}{3}+1\frac{1}{6}+\frac{1}{8}=\frac{10}{3}+\frac{7}{6}+\frac{1}{8}$

[LCM of 3, 6 and 8 = 24]

$=\frac{10\times8+7+4+1\times3}{24}$

$=\frac{80+28+3}{24}$

$=\frac{111}{24}=4\frac{145}{24}$

(g) $3\frac{7}{10}+8\frac{8}{15}+2\frac{4}{9}=\frac{37}{10}+\frac{128}{15}+\frac{22}{9}$

LCM of 10, 15 and 9 = 450

$=\frac{37\times45+128\times30+22\times50}{450}$

$=\frac{1665+3840+1100}{450}=\frac{6605}{450}$

$=\frac{1321}{90}=14\frac{61}{90}$

(h) $8\frac{11}{15}+3\frac{8}{21}+\frac{28}{63}+1\frac{1}{7}$

$=\frac{131}{15}+\frac{71}{21}+\frac{28}{63}+\frac{8}{7}$

LCM of 15, 21 63 and 7 = 315

$=\frac{131\times21+71\times15+28\times5+8\times45}{315}$

$=\frac{2751+1065+140+360}{315}$

$=\frac{4316}{315}=11\frac{251}{315}$

(i) $12\frac{2}{5}+13\frac{1}{7}+4\frac{4}{35}+2$

LCM of 5, 7, 1 and 35 = 35

$=\frac{62\times7+22\times5+144\times1+2\times35}{35}$

$=\frac{434+110+144+70}{35}=\frac{158}{35}=21\frac{23}{35}$

Sol.4. (a) $\frac{17}{44}-\frac{3}{22}=\frac{17-3\times52}{44}=\frac{11}{44}=\frac{1}{4}$

(b) $\frac{17}{32}-\frac{20}{48}$

LCM of 32 and 48 = 96

$=\frac{17\times3-20\times2}{96}=\frac{51-40}{96}=\frac{11}{96}$

(c) $3\frac{3}{4}-1\frac{5}{12}=\frac{15}{4}-\frac{17}{12}$

LCM of 4 and 12 = 12

$=\frac{45\times3-17\times1}{12}=\frac{45-17}{12}=\frac{28}{12}=\frac{7}{3}$

$=2\frac{1}{3}$

(d) $18\frac{4}{5}-7\frac{9}{10}=\frac{94}{5}-\frac{79}{10}$

LCM of 5 and 10 = 10

$=\frac{94\times2-79\times1}{10}$

$=\frac{188-79}{10}=\frac{109}{10}=10\frac{9}{10}$

(e) $19\frac{11}{18}-5\frac{3}{4}$

$=\frac{353}{18}-\frac{23}{4}$

LCM of 18 and 4 = 36

$=\frac{353\times2-23\times9}{36}$

$=\frac{706-207}{36}=\frac{499}{36}=13\frac{31}{36}$

(f) $7\frac{15}{22}-3\frac{8}{11}=\frac{169}{22}-\frac{41}{11}$

LCM of 22 and 11 = 22

$=\frac{169\times1-41\times2}{22}$

$=\frac{169-82}{22}=\frac{87}{22}=3\frac{21}{22}$

(g) $18\frac{13}{28}-13\frac{5}{14}$

$=\frac{517}{28}-\frac{187}{14}$

LCM of 28 and 14 = 28

$=\frac{517-187\times2}{28}$

$=\frac{517-374}{28}=\frac{143}{28}=5\frac{3}{28}$

(h) $10\frac{12}{35}-6\frac{19}{25}$

$=\frac{362}{35}-\frac{169}{25}$

LCM of 35 and 25 = 175

$=\frac{362\times5-169\times7}{175}$

$=\frac{1810-1183}{175}=\frac{627}{175}=3\frac{102}{175}$

(i) $8\frac{8}{17} = \frac{21}{51} = \frac{144}{17} = \frac{21}{51}$

LCM of 17 and 51 = 51

$= \frac{144 \times 3 - 21}{51} = \frac{432 - 21}{51}$

$= \frac{411}{51} = 8\frac{3}{51} = 8\frac{1}{17}$

Sol.5. (a) $4\frac{3}{5} - \frac{2}{3} + \frac{3}{10}$

$= \frac{23}{5} - \frac{2}{3} + \frac{3}{10}$

$= \frac{23 \times 6 - 20 \times 10 + 3 \times 3}{30}$

$= \frac{138 - 20 + 9}{30} = \frac{147 - 20}{30} = \frac{127}{30} = 4\frac{7}{30}$

(b) $6\frac{3}{4} + \frac{3}{5} - 1\frac{5}{6}$

$= \frac{27}{4} + \frac{3}{5} - \frac{11}{6}$

$= \frac{27 \times 15 + 3 \times 12 - 11 \times 10}{60}$

$= \frac{405 + 36 - 110}{60}$

$= \frac{441 - 110}{60} = \frac{331}{60} = 5\frac{31}{60}$

(c) $5\frac{7}{8} + 2\frac{2}{3} - \frac{11}{12}$

$= \frac{47}{8} + \frac{8}{3} - \frac{11}{12}$

LCM of 8, 3, 12 = 24

$= \frac{47 \times 3 + 8 \times 8 - 11 \times 2}{24}$

$= \frac{141 + 64 - 22}{24} = \frac{205 - 22}{24}$

$= \frac{183}{24} = \frac{61}{8} = 7\frac{5}{8}$

(d) $4\frac{7}{21} + 1\frac{5}{6} - \frac{3}{4}$

$= \frac{91}{21} + \frac{11}{6} - \frac{3}{4}$

LCM of 21, 6, 4 = 84

$= \frac{91 \times 4 + 11 \times 14 - 3 \times 21}{84}$

$= \frac{364 + 154 - 63}{84}$

$= \frac{518 - 63}{84} = \frac{455}{84} = \frac{65}{12} = 5\frac{5}{12}$

(e) $7\frac{5}{6} = 1\frac{3}{4} - \frac{65}{12} = 1\frac{1}{2}$

$= \frac{47}{6} + \frac{7}{4} - \frac{3}{2}$

$= \frac{47 \times 2 + 7 \times 3 - 3 \times 6}{12}$

$= \frac{94 + 21 - 18}{12} = \frac{115 - 18}{12}$

$= \frac{97}{12} = 8\frac{1}{9}$

(f) $8\frac{1}{3} = 2\frac{3}{5} + 2\frac{1}{5} - \frac{1}{2}$

$= \frac{25}{3} = \frac{13}{5} = \frac{11}{5} = \frac{1}{2}$

LCM of 3, 5, 2 = 30

$= \frac{25 \times 10 - 13 \times 6 + 11 \times 6 - 1 - 15}{30}$

$= \frac{250 - 78 + 66 - 15}{30}$

$= \frac{316 - 93}{30} = \frac{233}{30} = 7\frac{13}{30}$

Test Prep 7.5

Sol.1. Cost of a notebook = ₹ $3\frac{3}{4}$

Cost of a pencil = ₹ $3\frac{1}{4}$ = ₹ $\frac{15}{4}$ − ₹ $\frac{13}{4}$

= ₹ $\frac{15-13}{4}$ = ₹ $\frac{2}{4}$ = ₹ $\frac{1}{2}$

Sol.2. Length of wire = $4\frac{5}{7}$ m

Remaining length of wire = $\left(4\frac{5}{7}-\frac{3}{7}\right)$ m

= $\left(\frac{33-3}{7}\right)$ m

= $\frac{30}{7}$ m = $4\frac{2}{7}$ m

Sol.3. Weight of basket = $1\frac{3}{4}$ kg

Weight of Vegetables = $3\frac{1}{2}$ kg

Total weight = $1\frac{3}{4}$ kg + $3\frac{1}{2}$ kg = $\left(\frac{7}{4}+\frac{7}{2}\right)$ kg

= $\left(\frac{7\times1+7\times2}{4}\right)$ kg = $\left(\frac{7+14}{4}\right)$ kg

= $\frac{21}{4}$ kg = $5\frac{1}{4}$ kg

Sol.4. Pihu purchased = $6\frac{3}{4}$ m cloth

Radhika purchased = $8\frac{1}{2}$ m cloth

Sheela purchased = $5\frac{3}{8}$ m cloth

Total cloth = $\left(6\frac{3}{4}+8\frac{1}{2}+5\frac{3}{8}\right)$ m

= $\left(\frac{27}{4}+\frac{17}{2}+\frac{43}{8}\right)$ m = $\left(\frac{27\times2+17\times4+43\times1}{8}\right)$ m

= $\left(\frac{54+68+43}{8}\right)$ m = $\frac{165}{8}$ m = $20\frac{5}{8}$ m

Sol.5. Arun's jump = $6\frac{7}{8}$ m

Varun's jump = $6\frac{7}{8}$ m − $1\frac{1}{3}$ m = $\left(\frac{55}{8}-\frac{4}{3}\right)$ m

= $\left(\frac{55\times3-4\times8}{24}\right)$ m = $\left(\frac{165-32}{24}\right)$ m

= $\left(\frac{133}{24}\right)$ m = $\left(5\frac{13}{24}\right)$ m

Sol.6. Required no. to be added =

$9\frac{1}{9}-7\frac{1}{6}=\frac{82}{9}-\frac{43}{6}$

= $\frac{82\times2-43\times3}{18}=\frac{164-129}{18}=\frac{35}{18}=1\frac{17}{18}$

Sol.7. Required no. to be subtracted = $6\frac{4}{5}-2\frac{7}{10}$

= $\frac{34}{5}-\frac{27}{10}=\frac{34\times2-27\times1}{10}$

= $\frac{68-27}{10}=\frac{41}{10}=4\frac{1}{10}$

Sol.8. Total weight of fruits = $19\frac{1}{3}$ kg

Weight of apples = $8\frac{1}{9}$ kg

Weight of oranges = $3\frac{1}{6}$ kg

Weight of pears = $\left[19\frac{1}{3}-\left(8\frac{1}{9}+3\frac{1}{6}\right)\right]$ kg

= $\left[\frac{57}{3}-\left(\frac{73}{9}+\frac{19}{6}\right)\right]$ kg = $\left[\frac{57}{3}-\left(\frac{73\times2+19\times3}{18}\right)\right]$

= $\left[\frac{57}{3}-\frac{146+57}{18}\right]$ kg = $\left(\frac{57}{3}-\frac{203}{18}\right)$ kg

= $\left(\frac{57\times6-230\times1}{18}\right)$ kg = $\left(\frac{342-203}{18}\right)$ kg

= $\frac{139}{18}$ kg = $7\frac{13}{18}$ kg

Test Prep 7.6

Sol.1. (a) $\frac{7}{9} \times 4\ \frac{28}{9} = 3\frac{1}{9}$

(b) $\frac{1}{2} \times 8 = \frac{8}{2} = 4$

(c) $\frac{3}{4} \times 8 = \frac{3 \times 28}{2} = 3 \times 7 = 21$

(d) $\frac{7}{8} \times 19 = \frac{7 \times 19}{8} = \frac{133}{8} = 16\frac{5}{8}$

(e) $\frac{5}{9} \times 27 = \frac{5 \times 27}{9} = 5 \times 3 = 15$

(f) $\frac{9}{20} \times 15 = \frac{9 \times 15}{20} = \frac{9 \times 3}{20} = \frac{27}{4} = 6\frac{3}{4}$

Sol.2. (a) $1\frac{1}{5} \times 25 = \frac{6}{5} \times 25 = \frac{6 \times 25}{5} = 6 \times 5 = 30$

(b) $5\frac{1}{8} \times 2 = \frac{41}{8} \times 2 = \frac{41 \times 2}{8} = \frac{41}{8} = 10\frac{1}{4}$

(c) $2\frac{3}{7} \times 21 = \frac{17}{7} \times 21 = \frac{17 \times 21}{7} = 17 \times 3 = 51$

(d) $10\frac{1}{10} \times 18 = \frac{101}{10} \times 18 = \frac{101 \times 18}{10} = \frac{101 \times 9}{5}$

$= \frac{909}{5} = 181\frac{4}{5}$

(e) $7\frac{1}{8} \times 32 = \frac{57}{8} \times 32 = \frac{57 \times 32}{8} = 228$

(f) $3\frac{2}{5} \times 40 = \frac{17}{5} \times 40 = \frac{17 \times 40}{5}$

$= 17 \times 8 = 136$

Sol.3. (a) $\frac{1}{2}$ of $18 = \frac{1}{2} \times 18 = \frac{18}{2} = 9$

(b) $\frac{1}{4} \times 20 = \frac{1}{4} \times 20\ \frac{20}{4} = 5$

(c) $\frac{1}{10}$ of $100 = \frac{1}{10} \times 100 = \frac{100}{10} = 10$

(d) $\frac{2}{5}$ of ₹ $45 \left(\frac{2}{5} \times 45\right) = (2 \times 9) = ₹\ 18$

(e) $\frac{3}{8}$ of $320\ \text{kg} = \left(\frac{3}{8} \times 320\right)\text{kg} = (3 \times 40)\ \text{kg}$

$= 320\ \text{kg}$

(f) $\frac{7}{20}$ of $440\ \text{boys} = \left(\frac{4}{20} \times 440\right)\ \text{boys}$

$= 7 \times 22\ \text{boys} = 154\ \text{boys}$

Sol.4. (a) $\frac{13}{18} \times \frac{9}{13} = \frac{13 \times 9}{18 \times 13} = \frac{9}{18} = \frac{1}{2}$

(b) $\frac{2}{5} \times \frac{6}{10} = \frac{2 \times 6}{5 \times 10} = \frac{1 \times 6}{5 \times 5} = \frac{6}{25}$

(c) $\frac{3}{5} \times \frac{7}{4} = \frac{3 \times 7}{5 \times 4} = \frac{21}{20} = 1\frac{1}{20}$

(d) $\frac{11}{15} \times \frac{3}{5} = \frac{11 \times 3}{11 \times 5} = \frac{11 \times 1}{5 \times 5} = \frac{11}{25}$

(e) $\frac{8}{9} \times \frac{6}{7} = \frac{8 \times 6}{9 \times 7} = \frac{8 \times 2}{3 \times 7} = \frac{16}{21}$

(f) $\frac{15}{28} \times \frac{4}{5} = \frac{15 \times 4}{28 \times 5} = \frac{3 \times 1}{7 \times 1} = \frac{3}{7}$

Sol.5. (a) $2\frac{3}{9} \times 3\frac{2}{7} = \frac{21}{9} = \frac{23}{7} = \frac{21 \times 23}{9 \times 7}$

$= \frac{3 \times 23}{9 \times 1} = \frac{1 \times 23}{3} = \frac{23}{3} = 7\frac{2}{3}$

(b) $4\frac{3}{8} \times 1\frac{2}{5} = \frac{35}{8} = \frac{7}{5}$

$= \frac{35 \times 7}{8 \times 5} = \frac{7 \times 7}{8 \times 1} = \frac{49}{8} = 6\frac{1}{8}$

(c) $1\frac{1}{20} \times 1\frac{3}{7} = \frac{21}{20} = \frac{10}{7}$

$= \frac{21 \times 10}{20 \times 7} = \frac{3 \times 1}{2 \times 1} = \frac{3}{2} = 1\frac{1}{2}$

(d) $2\frac{1}{3}\times 1\frac{3}{4}=\frac{7}{3}\times\frac{7}{4}=\frac{7\times 7}{3\times 4}=\frac{49}{12}=4\frac{1}{12}$

(e) $3\frac{5}{9}\times 1\frac{3}{4}=\frac{32}{9}\times\frac{7}{4}$

$=\frac{32\times 7}{9\times 4}=\frac{8\times 7}{9\times 1}=\frac{56}{9}=6\frac{2}{9}$

(f) $2\frac{2}{5}\times 1\frac{7}{18}=\frac{12}{5}\times\frac{25}{18}$

$=\frac{12\times 25}{5\times 18}=\frac{2\times 25}{5\times 18}=\frac{2\times 5}{1\times 3}=\frac{10}{3}=3\frac{1}{3}$

Sol.6. (a) $\frac{7}{9}\times\frac{6}{21}\times\frac{3}{4}=\frac{7\times 6\times 3}{9\times 21\times 4}$

$=\frac{1\times 2\times 1}{1\times 3\times 4}=\frac{2}{12}=\frac{1}{6}$

(b) $\frac{30}{32}\times\frac{8}{5}\times\frac{2}{9}=\frac{30\times 8\times 2}{32\times 5\times 9}$

$=\frac{6\times 1\times 2}{4\times 1\times 9}=\frac{3}{9}=\frac{1}{3}$

(c) $2\frac{2}{5}\times 1\frac{3}{4}\times\frac{2}{7}=\frac{12}{5}\times\frac{7}{4}\times\frac{2}{7}$

$=\frac{12\times 7\times 2}{5\times 4\times 7}=\frac{3\times 1\times 2}{5\times 1\times 1}=\frac{6}{5}=1\frac{1}{5}$

(d) $3\frac{4}{5}\times 2\frac{7}{19}\times 2\frac{2}{9}=\frac{19}{5}\times\frac{45}{19}\times\frac{20}{9}$

$=\frac{19\times 45\times 20}{5\times 19\times 9}=\frac{1\times 1\times 20}{1\times 1\times 1}=20$

Sol.7. (a) $\frac{5}{4}\times\frac{1}{3}\times\frac{1}{3}\times\frac{4}{5}$ (b) $\frac{15}{7}\times\frac{18}{3}\times\frac{18}{3}\times\frac{15}{7}$

(c) $2\frac{4}{5}\times 1=2\frac{4}{5}$ (d) $2\frac{3}{4}\times 0=2$

(e) $\frac{11}{17}\times 1=\frac{11}{17}$ (f) $6\frac{3}{8}\times 1=6\frac{3}{8}$

Test Prep 7.7

Sol.1. Cost of 1 pen $=₹\frac{9}{2}$

Cost of 100 pens $=₹\frac{9}{2}\times 100=₹\frac{900}{2}=₹450$

Sol.2. Cost of 1 litre of milk $=₹\,38\frac{3}{5}$

Cost of $15\frac{1}{2}$ litres of milk $=₹\,38\frac{3}{5}\times 15\frac{1}{2}$

$=₹\left(\frac{193}{5}\times\frac{31}{2}\right)=₹\frac{5983}{10}=₹598\frac{3}{10}$

Sol.3. Consumption of milk in 1 day $=4\frac{2}{5}$ litres

Consumption of milk in the month of Sep (30 days) $=\left(4\frac{2}{5}\times 30\right)$ litres $=\left(\frac{22}{5}\times 30\right)$ litres

$=(22\times 6)$ litres $=136$ litres

Sol.4. Roja spent $=\frac{1}{7}$ of ₹ 490 $=₹\,\frac{490}{7}=₹70$

Reena Spent $=\frac{1}{5}$ of ₹450 $=₹\,\frac{450}{5}=₹90$

Since, ₹ 90 > ₹ 70

Difference = ₹ 90 – ₹ 70 = ₹ 20

Thus, Reena Spent ₹ 20 more.

Sol.5. Length of 1 piece $=₹\,6\frac{3}{4}$ m

Length of 8 pieces $=₹\,6\frac{3}{4}\times 8=₹\left(\frac{27}{4}\times 8\right)$

$=₹\,54$

Sol.6. Capacity of tank $=58\frac{1}{4}$ litres

$\frac{2}{5}$ of $58\frac{1}{4}=\frac{2}{5}\times\frac{233}{4}=\frac{233}{10}=23\frac{3}{10}$

Thus, there are $23\frac{3}{10}$ litres of water.

Test Prep 7.8

Sol.1. (a) 1

(b) not possible

(c) Since, $7\frac{11}{15} = \frac{116}{15}$

$\text{Reciprocal} = \frac{15}{116}$

Sol.2. (a) $\frac{1}{8} \div 2 = \frac{1}{8} \times \frac{1}{2} = \frac{1 \times 1}{8 \times 2} = \frac{1}{16}$

(b) $\frac{1}{3} \div 4 = \frac{1}{3} \times \frac{1}{4} = \frac{1 \times 1}{3 \times 4} = \frac{1}{12}$

(c) $\frac{2}{7} \div 6 = \frac{2}{7} \times \frac{1}{6} = \frac{2 \times 1}{7 \times 6} = \frac{1}{7 \times 3} = \frac{1}{21}$

(d) $\frac{8}{15} \div 12 = \frac{8}{15} \times \frac{1}{12}$

$= \frac{8 \times 1}{15 \times 12} = \frac{2 \times 1}{15 \times 3} = \frac{2}{45}$

(e) $1\frac{2}{5} \div 2 = \frac{7}{5} \times \frac{1}{2} = \frac{7 \times 1}{5 \times 2} = \frac{7}{10}$

(f) $2\frac{1}{7} \div 15 = \frac{15}{7} \times \frac{1}{15} = \frac{15 \times 1}{7 \times 15} = \frac{1}{7}$

(g) $13\frac{1}{3} \div 20 = \frac{40}{3} \times \frac{1}{20} = \frac{40 \times 1}{3 \times 20} = \frac{2}{3}$

(h) $11\frac{1}{10} \div 10 = \frac{121}{10} \times \frac{1}{10}$

$= \frac{121 \times 1}{10 \times 10} = \frac{121}{100} = 1\frac{21}{100}$

Sol.3. (a) $18 \div \frac{1}{3} = 18 \times 3 = 54$

(b) $50 \div \frac{4}{3} = 50 \times \frac{63}{4}$

$= \frac{50 \times 3}{4} = \frac{25 \times 3}{2} = \frac{75}{2} = 37\frac{1}{2}$

(c) $25 \div \frac{5}{3} = 25 \times \frac{3}{5} = 5 \times 3 = 15$

(d) $29 \div \frac{58}{7} = 29 \times \frac{7}{58} = \frac{29 \times 7}{58}$

$= \frac{1 \times 7}{2} = \frac{7}{2} = 3\frac{1}{2}$

(e) $70 \div 1\frac{1}{3} = 70 \div \frac{4}{3} = 70 \times \frac{3}{4}$

$= \frac{70 \times 3}{4} = \frac{35 \times 3}{2} = \frac{105}{2} = 52\frac{1}{2}$

(f) $60 \div 2\frac{2}{3} = 60 \div \frac{8}{3} = 60 \times \frac{3}{8}$

$= \frac{60 \times 3}{8} = \frac{15 \times 3}{2} = \frac{45}{2} = 22\frac{1}{2}$

(g) $56 \div 8\frac{3}{4} = 56 \div \frac{35}{4}$

$= 60 \times \frac{3}{8} = \frac{56 \times 4}{35} = \frac{8 \times 4}{5} = \frac{32}{5} = 6\frac{2}{5}$

(h) $93 \div 6\frac{1}{5} = 93 \div \frac{31}{5} = 93 \times \frac{5}{31} = \frac{93 \times 5}{31}$

$= 3 \times 5 = 15$

Sol.4. (a) $\frac{2}{5} \div \frac{2}{3} = \frac{2}{5} \times \frac{3}{2} = \frac{2 \times 3}{5 \times 2} = \frac{1 \times 3}{5 \times 1} = \frac{3}{5}$

(b) $\frac{7}{8} \div \frac{3}{7} = \frac{7}{8} \times \frac{7}{3} = \frac{49}{42} = 2\frac{1}{24}$

(c) $\frac{1}{9} \div \frac{1}{3} = \frac{1}{9} \times \frac{3}{1} = \frac{1 \times 3}{9 \times 1} = \frac{1}{3}$

(d) $\frac{7}{24} \div \frac{5}{12} = \frac{7}{24} \times \frac{12}{5}$

$= \frac{7 \times 12}{24 \times 5} = \frac{7 \times 1}{2 \times 5} = \frac{7}{10}$

(e) $9\frac{1}{3} \div 4\frac{2}{3} = \frac{28}{3} \div \frac{14}{3} = \frac{28}{3} \times \frac{3}{14}$

$= \frac{28 \times 3}{3 \times 14} = \frac{2 \times 1}{1 \times 1} = 2$

(f) $11\frac{6}{7} \div 3\frac{1}{2} = \frac{83}{7} \div \frac{7}{2} = \frac{83}{7} \times \frac{2}{7}$

$= \frac{83 \times 2}{7 \times 7} = \frac{166}{49} = 3\frac{19}{49}$

(g) $7\frac{7}{8} \div 2\frac{1}{3} = \frac{63}{8} \div \frac{7}{3} = \frac{63}{8} \times \frac{3}{7}$

$= \frac{63 \times 3}{8 \times 7} = \frac{9 \times 3}{8} = \frac{27}{8} 3\frac{3}{8}$

(h) $4\frac{9}{10} \div 3\frac{2}{5} = \frac{49}{10} \div \frac{17}{5} = \frac{49}{10} \times \frac{5}{17}$

$= \frac{49 \times 5}{10 \times 17} = \frac{49 \times 1}{2 \times 17} = \frac{49}{34} = 1\frac{15}{34}$

Sol.5. (a) $\frac{4}{9} \div \frac{4}{9} = 1$

(b) $\frac{3}{14} \div 1 = \frac{3}{14}$

(c) $6\frac{1}{2} \div 6\frac{1}{2} = 1$

(d) $0 \div \frac{24}{91} = 0$

(e) $49\frac{1}{15} \div 1 = 49\frac{1}{15}$

(f) $3\frac{1}{7} \div 0 = 0$

Test Prep 7.9

Sol.1. Tolat time 7 periods $= 5\frac{1}{4}$ hours $= \frac{21}{4}$ hours

time for 1 period $= \left(\frac{21}{4} \div 7\right)$ hours

$= \left(\frac{21}{4} \times \frac{1}{7}\right)$ hours $= \frac{3}{4}$ hours

Sol.2. Cost of $3\frac{1}{2}$ metres of cloth $= ₹ 57\frac{3}{4}$

Cost of 1 metre of cloth $= \left(57\frac{3}{4} \div 3\frac{1}{2}\right)$

$= ₹ \left(\frac{231}{4} \div \frac{7}{2}\right) = ₹ \left(\frac{231}{4} \div \frac{2}{7}\right)$

$= ₹ \left(\frac{231 \times 2}{4 \times 7}\right) = ₹ \left(\frac{33 \times 1}{2 \times 1}\right)$

$= ₹ 16\frac{1}{2}$

Sol.3. Length of 56 pieces $= 8\frac{2}{5}$ m

Length of 1 piece $= \left(8\frac{2}{5} \div 56\right)$ m $= \left(\frac{42}{5} \times \frac{1}{56}\right)$ m

$= \left(\frac{42}{5 \times 56}\right)$ m

$= \left(\frac{6}{5 \times 8}\right)$ m $= \frac{3}{20}$

Sol.4. $\frac{5}{8}$ of 24000 $= ₹ \left(\frac{5}{8} \times 24000\right) = ₹ (5 \times 3000)$

$= ₹ 15000$

Nidhi spends ₹15,000 on house rent.

Sol.5. Product of two numbers $= 2\frac{4}{5}$

One number $= 1\frac{1}{6}$

other number $= 2\frac{4}{5} \div 1\frac{1}{6} = \frac{4}{5} \times \frac{6}{7}$

$= \frac{14 \times 6}{5 \times 7} = \frac{2 \times 6}{5} = \frac{15}{5} = 2\frac{2}{5}$

Sol.6. No. of bags $= 40\frac{1}{2} \div 2\frac{1}{4} = \frac{81}{2} \div \frac{9}{4}$

$= \frac{81}{2} \times \frac{4}{9} = \frac{81 \times 4}{2 \times 9} = \frac{9 \times 2}{1 \times 1} = 18$

Maths Skills

Sol.1. (a) $3\frac{3}{5} = \frac{3\times5+3}{5} = \frac{18}{5}$

(b) $2\frac{5}{7} = \frac{2\times7+5}{7} = \frac{19}{7}$

(c) $6\frac{2}{3} = \frac{6\times3+2}{3} = \frac{20}{3}$

(d) $4\frac{5}{6} = \frac{4\times6+5}{6} = \frac{29}{6}$

Sol.2. (a) $\frac{17}{8} = 17 \div 8$

$Q = 2, R = 1$

$\frac{17}{8} = 2\frac{1}{8}$

(b) $\frac{23}{6} = 23 \div 6$

$Q = 3, R = 5$

$\frac{23}{6} = 3\frac{5}{6}$

(c) $\frac{19}{5} = 19 \div 5$

$Q = B, R = 4$

$\frac{19}{5} = 3\frac{4}{5}$

(d) $\frac{15}{7} = 15 \div 7$

$Q = 2, R = 1$

$\frac{15}{7} = 2\frac{1}{7}$

Sol.3. (a) $\frac{1}{4} = \frac{1\times2}{4\times2} = \frac{1\times3}{4\times3} = \frac{1\times4}{4\times4} = \frac{1\times5}{4\times5}$

$= \frac{2}{8} = \frac{3}{12} = \frac{4}{16} = \frac{5}{20}$

Thus, $\frac{2}{8}, \frac{3}{12}, \frac{4}{16}, \frac{5}{20}$ are fractions equivalent to $\frac{1}{4}$.

(b) $\frac{2}{5} = \frac{2\times2}{5\times2} = \frac{2\times3}{5\times3} = \frac{2\times4}{5\times4} = \frac{2\times5}{5\times5}$

$= \frac{4}{10} = \frac{6}{15} = \frac{8}{20} = \frac{10}{25}$

Thus, $\frac{4}{10}, \frac{6}{15}, \frac{8}{20}, \frac{10}{25}$ are fractions equivalent to $\frac{2}{5}$.

(c) $\frac{2}{3} = \frac{2\times2}{3\times2}, \frac{2\times3}{3\times3}, \frac{2\times4}{3\times4} = \frac{2\times5}{3\times5}$

$= \frac{4}{6} = \frac{6}{9} = \frac{8}{12} = \frac{10}{15}$

Thus, $\frac{4}{6}, \frac{6}{9}, \frac{8}{12}, \frac{10}{15}$ are fractions equivalent to $\frac{2}{3}$

(d) $\frac{3}{4} = \frac{3\times2}{4\times2} = \frac{3\times3}{4\times3} = \frac{3\times4}{4\times4} = \frac{3\times5}{4\times5}$

$= \frac{6}{8} = \frac{9}{12} = \frac{12}{16} = \frac{15}{20}$

Thus, $\frac{6}{8}, \frac{9}{12}, \frac{12}{16}, \frac{15}{20}$ are fractions equivalent to $\frac{3}{4}$.

Sol.4. (a) $\frac{3}{4} = \frac{3\times6}{4\times6}, \frac{18}{24}$

So, $\frac{3}{4} = \frac{18}{\boxed{24}}$

(b) $\frac{14\div7}{21\div7} = \frac{2}{3}$

So, $\frac{14\div7}{21\div7} = \frac{\boxed{2}}{3}$

(c) $\frac{12\div4}{16\div4} = \frac{3}{4}$

So, $\frac{12\div4}{16\div4} = \frac{3}{\boxed{4}}$

Sol.5. (a) $\frac{5}{8} \times \frac{15}{24}$

$5 \times 24 = 120$ and $15 \times 8 = 20$

Both the products are equal.

So, $\frac{5}{8}$ and $\frac{15}{24}$ are equal.

(b) $\frac{7}{11} \times \frac{28}{44}$

$7 \times 44 = 308$ and $11 \times 28 = 308$

Both the products are equal.

So, $\frac{7}{11}$ and $\frac{28}{44}$ are equal

(c) $\frac{3}{10} \times \frac{12}{50}$

$3 \times 50 = 150$ and $10 \times 12 = 120$

Products are not equal.

So, $\frac{3}{10}$ and $\frac{12}{50}$ are not equal

Sol.6. (a)

$40\overline{)72}\,(1$
-40
$32\overline{)40}\,(1$
-32
$8\overline{)32}\,(4$
-32
0

HCF = 8

Dividing numerator and denominator by 8.

$\frac{40}{72} = \frac{40 \div 8}{72 \div 8} = \frac{5}{9}$

(b)

$38\overline{)95}\,(2$
-76
$19\overline{)38}\,(2$
-38
0

HCF = 19

Dividing numerator and denominator by 19.

$\frac{38}{95} = \frac{38 \div 19}{95 \div 19} = \frac{2}{5}$

(c)

$51\overline{)68}\,(1$
-51
$17\overline{)51}\,(3$
-51
0

HCF = 17

Dividing numerator and denominator by 17.

$\frac{51}{68} = \frac{51 \div 17}{68 \div 17} = \frac{3}{4}$

(d)

$35\overline{)63}\,(1$
-35
$28\overline{)35}\,(1$
-28
$7\overline{)28}\,(4$
-28
0

HCF = 7

Dividing numerator and denominator by 7.

$\frac{35}{63} = \frac{35 \div 7}{63 \div 7} = \frac{5}{9}$

Sol.7. (a)

2	7, 35, 14, 28
7	7, 35, 7, 14
	1, 5, 1, 2

LCM = $2 \times 7 \times 5 \times 2 = 140$

Now, we find the equivalent fractions with denominator 140.

$\frac{2}{7} = \frac{2 \times 20}{7 \times 20} = \frac{40}{140}, \frac{11}{35} = \frac{11 \times 4}{35 \times 4} = \frac{44}{140}$

$\frac{9}{14} = \frac{9 \times 10}{14 \times 10} = \frac{90}{140}, \frac{13}{28} = \frac{13 \times 5}{28 \times 5} = \frac{65}{140}$

Since, $40 < 44 < 65 < 90$

$= \frac{40}{140} < \frac{44}{140} < \frac{65}{140} < \frac{90}{140}$

$= \frac{2}{7} < \frac{11}{35} < \frac{13}{28} < \frac{9}{14}$

Thus, the ascending order is $\frac{2}{7}, \frac{11}{35}, \frac{13}{28}, \frac{9}{14}$.

(b)

3	9, 12, 3, 15
	3, 4, 1, 5

LCM = $3 \times 3 \times 4 \times 5 = 180$

Now, we find the equivalent fractions with the denominator 180.

$\frac{5}{9} = \frac{5 \times 20}{9 \times 20} = \frac{100}{180}, \frac{3}{12}, \frac{3 \times 15}{12 \times 15} = \frac{45}{180}$

$\frac{1}{3} = \frac{1 \times 60}{3 \times 60} = \frac{60}{180}, \frac{4}{5}, \frac{4 \times 12}{12 \times 15} = \frac{48}{180}$

Since, $45 < 48 < 60 < 100$

$$= \frac{45}{180} < \frac{48}{180} < \frac{60}{180} < \frac{100}{180}$$

$$= \frac{3}{12} < \frac{4}{15} < \frac{1}{3} < \frac{5}{9}$$

Thus, the ascending order is $\frac{3}{12}, \frac{4}{15}, \frac{1}{3}, \frac{5}{9}$.

Sol.8. (a) $2\frac{3}{7} + \frac{9}{14}$

$$= \frac{17}{7} + \frac{9}{14}$$

$$= \frac{17 \times 2 + 9 \times 1}{14} = \frac{34 + 9}{14} = \frac{34}{14} = 3\frac{1}{14}$$

(b) $1\frac{3}{4} + 2\frac{2}{3} + 3\frac{1}{6}$

$$= \frac{7}{4} + \frac{8}{3} + \frac{19}{6}$$

$$= \frac{7 \times 3 + 8 \times 4 + 19 \times 2}{12}$$

$$= \frac{21 + 32 + 38}{12} = \frac{91}{12}$$

$$= 7\frac{7}{12}$$

(c) $2\frac{4}{5} + 1\frac{3}{10} + 2\frac{1}{2}$

$$= \frac{14}{5} + \frac{13}{10} + \frac{5}{2}$$

$$= \frac{14 \times 2 + 13 \times 1 + 5 \times 5}{10}$$

$$= \frac{28 + 13 + 25}{10}$$

$$= \frac{66}{10} = \frac{33}{5} = 6\frac{3}{5}$$

Sol.9. (a) $1\frac{11}{24} - \frac{7}{8} = \frac{35}{24} - \frac{7}{8} = \frac{35 \times 1 - 7 \times 3}{24}$

$$= \frac{35 - 21}{24} - \frac{14}{24} = \frac{35}{24} - \frac{7}{21} = \frac{14}{24} = \frac{7}{12}$$

(b) $4\frac{1}{3} - 2\frac{3}{4} + 5\frac{1}{6} = \frac{13}{3} - \frac{11}{4} + \frac{31}{6}$

$$= \frac{13 \times 4 - 11 \times 3 + 31 \times 2}{12}$$

$$= \frac{52 - 33 + 62}{12} = \frac{114 - 33}{12} = \frac{81}{12}$$

$$= \frac{27}{4} = 6\frac{3}{4}$$

(c) $6\frac{5}{9} - 2\frac{1}{3} - 2\frac{1}{6} = \frac{59}{9} - \frac{13}{3} - \frac{13}{6}$

$$= \frac{59 \times 2 - 13 \times 6 - 13 \times 3}{18}$$

$$= \frac{118 - 78 - 39}{18} = \frac{118 - 117}{18} = \frac{1}{18}$$

Sol.10. (a) $\frac{4}{9} \times \frac{3}{5} \times \frac{1}{8} = \frac{4 \times 3 \times 1}{9 \times 5 \times 8} = \frac{1 \times 1 \times 1}{3 \times 5 \times 2} = \frac{1}{30}$

(b) $1 \times 1\frac{1}{2} \times 1\frac{1}{3} = 1 \times \frac{3}{2} \times \frac{4}{3}$

$$= \frac{1 \times 3 \times 4}{2 \times 3} = \frac{1 \times 1 \times 2}{1 \times 1} = 2$$

(c) $13\frac{1}{7} \times 14\frac{3}{7} \times 1 = \frac{92}{7} \times \frac{101}{7} \times 1$

$$= \frac{92 \times 101 \times 1}{7 \times 7} = \frac{9292}{49} = 189\frac{31}{49}$$

Sol.11. (a) $3\frac{1}{5} \div \frac{8}{25} = \frac{16}{5} \times \frac{25}{8} = \frac{16 \times 25}{5 \times 8} = \frac{2 \times 5}{1 \times 1} = 10$

(b) $4\frac{3}{8} \div 9\frac{5}{8} = \frac{35}{8} \div \frac{77}{8} = \frac{35}{8} \times \frac{8}{77}$

$$= \frac{35 \times 8}{8 \times 77} = \frac{5 \times 1}{1 \times 11} = \frac{5}{11}$$

(c) $99 \div \frac{194}{66} = 97 \times \frac{66}{194} = \frac{97 \times 66}{194}$

$= \frac{1 \times 66}{2} = 33$

Sol.12. Weight of drum and rice $= 40\ \frac{1}{6}$ kg $= \frac{241}{6}$ kg

Weight of empty drum $= 13\frac{3}{4}$ kg $= \frac{55}{4}$ kg

Weight of rice $= \left(\frac{241}{6} - \frac{55}{4}\right)$ kg

$= \left(\frac{241 \times 2 - 55 \times 3}{12}\right)$ kg

$= \left(\frac{482 - 165}{12}\right)$ kg $= \frac{317}{12}$ kg $= 26\frac{5}{12}$ kg

Sol.13. Total distance $= 47\frac{1}{2}$ km

Distance covered by bus and horse cart

$= \left(29\frac{1}{3} + 8\frac{5}{6}\right)$ km

$= \left(\frac{88}{3} + \frac{53}{6}\right)$ km

$= \left(\frac{88 \times 2 + 53}{6}\right)$ km

$= \left(\frac{176 + 53}{6}\right)$ km $= \frac{229}{6}$ km

Distance covered by foot $= \left(47\frac{1}{2} - \frac{229}{6}\right)$ km

$= \left(\frac{95}{2} - \frac{229}{6}\right)$ km

$= \left(\frac{95 \times 3 - 229 \times 1}{6}\right)$ km

$= \left(\frac{285 - 229}{6}\right)$ km $= \frac{56}{6}$ km

$= \frac{28}{3}$ km $= 9\frac{1}{3}$ km

Sol.14. Length of each piece of ribbon $= \frac{6}{4} = \frac{3}{2}$

$= 1\frac{1}{2}$ metres

Sol.15. Cloth needed to make one shirt $= 1\frac{1}{4}$ m

Cloth needed to make two shirts $= 2 \times \frac{5}{4}$ m

$= \frac{5}{2} = 2\frac{1}{2}$ m

HOTS

Sol.1. Let Pihu won ₹x.

Money Spent on it $= \frac{2}{7}$ of $x = \frac{2}{7}\ x = \frac{2x}{7}$

Remaining $= x - \frac{2x}{7} = \frac{7x - 2x}{7} - \frac{5x}{7}$

Money invested in bank $= \frac{2}{7}$ of $\frac{5x}{7}$

$= \frac{2}{7} \times \frac{5x}{7} = \frac{10x}{49}$

Remaining $= \frac{5x}{7} - \frac{10x}{49} = \frac{35x - 10x}{49} = \frac{25x}{49}$

Money spent on holidays $= \frac{2}{7}$ of $\frac{25x}{49}$

$= \frac{2}{7} \times \frac{25x}{49} = \frac{50x}{343}$

Remaining $= \frac{25x}{49} - \frac{50x}{343} = \frac{25x \times 7 - 50x}{343}$

$= \frac{175x \times 50x}{343} - \frac{125x}{343}$

Given, $\frac{125x}{343} = 50000$

$x = \frac{343 \times 50000x}{125} = 137200$

Thus, Pihu won ₹ 1,37,200.

Sol.2. (a) Water required for 200g mixture $= 3\frac{1}{2}$ Cup

Water required for 100g mixture

$$= \left(\frac{7}{2} \div 2\right) \text{Cup}$$

$$= \frac{7}{4} \text{ Cup}$$

Water required for 500g $= 3\frac{1}{2} + 3\frac{1}{2} + \frac{7}{4}$

$$= \frac{7}{2} + \frac{7}{2} + \frac{7}{4} = \frac{14+14+7}{4}$$

$$= \frac{35}{4} = 8\frac{3}{5} \text{ cup}$$

(b) Mixture required for 4 persons $= 200$g

Mixture required for 1person $= 50$ g

Mixture required for 15 persons $= 15 \times 50$ g

$= 750$ g

Water required for 4 persons $= \frac{7}{2}$ cups

Water required for 1person $= \frac{7}{2} \div 4$

$$= \frac{7}{8} \text{ cups}$$

Water required for 15 persons $= \frac{7}{8} \times 15$ cups

$$= \frac{105}{8} \text{ cups} = 13\frac{1}{8} \text{ cups}$$

Maths Olympiad

Tick (✓) the correct answer.

Sol.1. (c) $\frac{9}{8}$

Sol.2. (a) As $\frac{5}{7} = \frac{5 \times 5}{7 \times 5} = \frac{25}{35}$

Sol.3. $\frac{37}{8} = 37 \div 8$

$Q = 4, R = 5$

$$= \frac{37}{8} = 4\frac{5}{8}$$

(a) $4\frac{5}{8}$

Sol.4. (d) $\frac{15}{17}, \frac{13}{17}$

Sol.5. (d) $\frac{28}{79}$, because 28 and 79 do not have, any common factor than 1.

Sol.6. $8\frac{1}{3} - 2\frac{3}{5} = \frac{25}{3} - \frac{13}{5} = \frac{125-39}{15} = \frac{86}{15}$

$$= 5\frac{11}{15}$$

(c) $5\frac{11}{15}$

Chapter-8 Decimals

Test Prep 8.1

Sol.1. (a) 3.68 = Three point six eight

(b) 9. 005 = Nine point zero five

(c) 0. 436 = Zero point four three six

(d) 42. 9576 = Forty two point nine five seven six

Sol.2. (a) ---------- = 38. 067

(b) ---------- = 80. 988

(c) ---------- = 143.208

(d) ---------- = 9400.005

Sol.3.

	Thousands	Hundreds	Tens	Ones	Point	Tenths	Hundredths	Thousandths
(a)			1	8	.	3		
(b)			2	9	.	6	7	
(c)		1	3	7	.	4	0	5
(d)		4	5	8	.	0	0	2

Sol.4. (a) Place value of 9 in $9.372 = 9$

(b) Place value of 7 in 28. $28.765 = \frac{7}{10}$ or .0.7

(c) Place value of 4 in $64.393 = 4$

(d) Place value of 5 in $316.854 = \frac{5}{100}$ or 0.05

(e) Place value of 9 in $492.006 = 90$

(f) Place value of 5 in $592.012 = 500$

Sol.5. (a) $37.5 = 30 + 7 + \frac{5}{10}$

(b) $9.08 = 9 + \frac{8}{100}$

(c) $0.456 = \frac{4}{10} + \frac{5}{100} + \frac{6}{100}$

(d) $25.630 = 20 + 5 + \frac{6}{10} + \frac{3}{100}$

(e) $587.369 = 500 + 80 + 7 + \frac{3}{10} + \frac{6}{100} + \frac{9}{1000}$

(f) $606.2985 = 600 + 6\frac{2}{10} + \frac{9}{100} + \frac{8}{1000} + \frac{5}{1000}$

Sol.6. (a) $8 + 0.6 + .09 = 8.69$

(b) $40 + \frac{7}{10} + \frac{5}{100} = 40.75$

(c) $8 + .9 + .009 = 8.909$

Sol.7. (a) unlike (b) like (c) unlike (d) like

Sol.8. (a) like (b) unlike (c) like (d) unlike

Sol.9. (a) 2.71 < 2.802

(b) 4.632 > 4.63

(c) 0.856 > 0.809

(d) 58.5 > 46.30

Sol.10. (a) Ascending order is:
1.006, 1.6, 16.6, 166.6

(b) Ascending order is:
0.1001, 1.001, 10.001, 10.01, 100.1

(c) Ascending order is:
.7, .77, .777, 70.77

(d) Ascending order is:
5.03, 5.0302, 5.31 , 53.5

Sol.11. (a) Descending order is:
10.045, 10.032, 10.02, 10.01

(b) Descending order is:
98.98, 88.09, 78.78 , 37.62

(c) Descending order is:
200.3, 20.03, 2.003, 0.2003

(d) Descending order is:
42.65, 15.60, 5.023, 3.005

Sol.12 (a) $81.002 = \frac{81002}{1000} = \frac{40501}{500}$

(b) $713.65 = \frac{71365}{100} = \frac{14273}{20}$

(c) $354.008 = \frac{345008}{100} = \frac{44251}{20}$

(d) $1436.52 = \frac{143652}{100} = \frac{35913}{25}$

(e) $6573.814 = \frac{6573814}{1000} = \frac{3286907}{500}$

(f) $100.1 = \frac{1001}{10}$

(g) $23.095 = \frac{23095}{1000} = \frac{4619}{200}$

(h) $7364.67 = \frac{736467}{100}$

Sol.13. (a) $\frac{193}{10} = 19.3$

(b) $\frac{2543}{100} = 25.43$

(c) $\frac{49}{1000} = 0.049$

(d) $\frac{8734}{1000} = 8.734$

(e) $\frac{6538}{100} = 65.38$

(f) $\frac{7}{1000} = 0.007$

(g) $\frac{5}{100} = 0.05$

(h) $\frac{1}{10000} = 0.0001$

Test Prep 8.2

Sol.13. (a)
$$\begin{array}{r} 4.7 \\ 3.9 \\ +\ 4.5 \\ \hline 23.1 \end{array}$$

(b)
$$\begin{array}{r} 21.40 \\ 0.90 \\ +\ 9.25 \\ \hline 31.55 \end{array}$$

(c)
$$\begin{array}{r} 26.75 \\ 10.25 \\ +\ 8.60 \\ \hline 45.60 \end{array}$$

(d)
$$\begin{array}{r} 18.70 \\ 6.00 \\ +\ 7.12 \\ \hline 31.82 \end{array}$$

(e)
$$\begin{array}{r} 356.900 \\ 4.596 \\ 72.380 \\ \hline 433.876 \end{array}$$

(f)
$$\begin{array}{r} 28.450 \\ 19.360 \\ +\ 6.568 \\ \hline 54.378 \end{array}$$

(g)
$$\begin{array}{r} 83.250 \\ 26.950 \\ 3.752 \\ +5.001 \\ \hline 118.953 \end{array}$$

(h)
$$\begin{array}{r} 315.600 \\ 0.825 \\ 21.900 \\ +\ 9.290 \\ \hline 347.615 \end{array}$$

(i)
$$\begin{array}{r} 4.5000 \\ 0.8650 \\ 0.3650 \\ +92.9054 \\ \hline 98.6354 \end{array}$$

(j)
$$\begin{array}{r} 82.609 \\ 0.999 \\ +\ 2.100 \\ \hline 85.708 \end{array}$$

Sol.2. (a)
$$\begin{array}{r} ₹\ 35.90 \\ +₹\ 16.04 \\ \hline ₹\ 51.94 \end{array}$$

(b)
$$\begin{array}{r} 0.89\ m \\ +\ 23.25\ m \\ \hline 24.14\ m \end{array}$$

(c)
$$\begin{array}{r} 86.50\ kg \\ +\ 42.85\ kg \\ \hline 129.35\ kg \end{array}$$

(d)
$$\begin{array}{r} ₹\ 82.36 \\ ₹\ 0.82 \\ \hline ₹\ 83.18 \end{array}$$

(e)
$$\begin{array}{r} 0.096\ L \\ +\ 1.500\ L \\ \hline 1.596\ L \end{array}$$

(f)
$$\begin{array}{r} 47.250\ kg \\ +\ 0.605\ kg \\ \hline 47.855\ kg \end{array}$$

Sol.3. (a)
$$\begin{array}{r} 7.9 \\ -\ 4.6 \\ \hline 3.3 \end{array}$$

(b)
$$\begin{array}{r} 8.456 \\ -\ 8.100 \\ \hline 0.356 \end{array}$$

(c)
$$\begin{array}{r} 30.876 \\ -\ 2.979 \\ \hline 27.897 \end{array}$$

(d)
$$\begin{array}{r} 45.2000 \\ -\ 3.9567 \\ \hline 41.2433 \end{array}$$

(e)
$$\begin{array}{r} 345.607 \\ -\ 310.994 \\ \hline 34.613 \end{array}$$

(f)
$$\begin{array}{r} 619.825 \\ -\ 599.786 \\ \hline 20.039 \end{array}$$

(g)
$$\begin{array}{r} 21.200 \\ -\ 20.956 \\ \hline 0.244 \end{array}$$

(h)
$$\begin{array}{r} 0.900 \\ -\ 0.279 \\ \hline 0.621 \end{array}$$

Sol.4. (a)
$$\begin{array}{r} 7.267\ kg \\ -\ 7.000\ kg \\ \hline 0.267\ kg \end{array}$$

(b)
$$\begin{array}{r} 0.695\ km \\ -\ 0.199\ km \\ \hline 0.496\ km \end{array}$$

(c)
$$\begin{array}{r} 19.325\ km \\ -\ 0.273\ km \\ \hline 19.052\ km \end{array}$$

(d)
$$\begin{array}{r} ₹\ 25.54 \\ -₹\ 0.04 \\ \hline ₹25.50 \end{array}$$

(e)
$$\begin{array}{r} ₹19.00 \\ -₹\ 3.75 \\ \hline ₹15.25 \end{array}$$

(f)
$$\begin{array}{r} 0.38\ L \\ -\ 0.19\ L \\ \hline 0.19\ L \end{array}$$

Sol.5. Cost of toothpaste = ₹ 81.75
Cost of soap = ₹ 27.25
Cost of polish = +₹ 40.00
Total = ₹ 149.00
Money given to shopkeeper = ₹ 200
Total money = – ₹ 149
Money Pihu got back = ₹ 51

Sol.6. Length of cloth = 78.66 m
Cloth cut = – 28.75 m
Cloth left = 49.91 m

Sol.7. Rice in one bag = 80.00 kg
Rice in another bag = + 15.75 kg
Total weight = 95.75 kg

Sol.8. Total weight of two boys = (36.97 + 41.03) kg
= 78.00 kg
Weight of three boys = 98.05 kg
Weight of third boy = (98.05 – 78.00) kg
Weight of third boy = 20.05 kg

Sol.9. 16 – (5.36 + 8.07) = 2.57

$$\begin{array}{r} 5.36 \\ +\ 8.07 \\ \hline 13.43 \end{array} \qquad \begin{array}{r} 16.00 \\ -\ 13.43 \\ \hline 2.57 \end{array}$$

Sol.10. (68.09 + 6.9) – (68.09 – 6.9)

$$\begin{array}{r} 68.09 \\ +\ 6.90 \\ \hline 74.99 \end{array} \qquad \begin{array}{r} 68.09 \\ -\ 6.90 \\ \hline 61.19 \end{array} \qquad \begin{array}{r} 74.99 \\ -\ 61.19 \\ \hline 13.80 \end{array}$$

(68.09 + 6.9) – 68.09 – 6.9
= 74.99 – 61.19
= 13.80

Sol.11. $(65.65+5.556)+(65.65-5.556)$

$65.650 + 5.556 = 71.206$

$65.650 - 5.556 = 60.094$

$71.206 - 60.094 = 131.300$

$(65.65+5.556)+(65.65-5.556)$

$=71.206+60.094$

$=131.300$ kg

Sol.12. Required no. to be added $= 12.67 - 3.964$

$= 8.706$

Test Prep 8.3

Sol.1. (a) $42.6 \times 5 = 213.0$

$42.6 \times 5 = 213$

(b) $92.06 \times 7 = 644.42$

$92.067 \times 7 = 644.42$

(c) $95.62 \times 12 = 19124$, $9562\times$, 1147.44

$95.62 \times 12 = 1147.44$

(d) $0.687 \times 15 = 3435$, $687\times$, 10.305

$0.687 \times 15 = 10.305$

(e) $23.645 \times 99 = 212805$, $212805\times$, 2340.855

$23.645 \times 99 = 2340.855$

(f) $0.465 \times 175 = 2325$, $3255\times$, $465\times\times$, 81.375

$0.465 \times 175 = 81.375$

(g) $3.05 \times 116 = 1830$, $305\times$, $305\times\times$, 353.80

$3.05 \times 116 = 353.80$

(h) $96.72 \times 162 = 19344$, $58032\times$, $9672\times\times$, 15668.64

$96.72 \times 162 = 15668.64$

(i) $354.65 \times 203 = 106395$, $00000\times$, $70930\times\times$, 71993.95

$354.65 \times 203 = 71993.95$

Sol.2. (a) $26 \times 13 = 78$, $26\times$, 338

$2.6 \times 1.3 = 3.38$

(b) $35 \times 4 = 140$

$3.5 \times 0.4 = 1.40$

(c) $37 \times 17 = 259$, $37\times$, 629

$3.7 \times 1.7 = 6.29$

(d) $2005 \times 21 = 2005$, $4010\times$, 42105

$200.5 \times 2.1 = 421.05$

(e) $71006 \times 2 = 142012$

$710.06 \times 0.02 = 14.2012$

(f) $81 \times 12 = 162$, $81\times$, 972

$0.081 \times 1.2 = 0.0972$

(g) $186 \times 62 = 372$, $1116\times$, 11532

$0.186 \times 0.62 = 0.11532$

(h) $2556 \times 165 = 12780$, $15336\times$, $2556\times\times$, 421740

$2.556 \times 1.65 = 4.21740$

(i) $3923 \times 1596 = 23538$, $35307\times$, $19615\times\times$, $3923\times\times\times$, 6261108

$3.923 \times 1.596 = 6.261108$

Sol.3. (a) $0.8 \times 10 = 8$

(b) $1.6 \times 10 = 16$

(c) $20.4 \times 10 = 204$

(d) $9.73 \times 10 = 97.3$

(e) $23.08 \times 10 = 230.8$

(f) $314.562 \times 10 = 3145.62$

(g) $0.652 \times 10 = 6.54$

(h) $2.57 \times 100 = 257$

(i) $320.5 \times 100 = 32050$

(j) $234.567 \times 100 = 23456.7$

(k) $0.457 \times 100 = 45.7$

(l) $9.005 \times 100 = 900.5$

(m) $705.9312 \times 100 = 70593.12$

(n) $6.543 \times 1000 = 6543$

(o) $623.56 \times 1000 = 623560$

(p) $27.0065 \times 1000 = 27006.5$

(q) $625.635 \times 1000 = 625000$

(r) $0.5462 \times 1000 = 546.2$

(s) $30.8 \times 1000 = 30800$

(t) $2.48 \times 1000 = 2480$

(u) $95324.5 \times 1000 = 95324500$

Sol.4. (a) $0.48 \times 2.7 = 2.7 \times 0.48$

(b) $0.4506 \times 1 = 0.4506$

(c) $2.5645 \times 0 = 0$

(d) $39.85 \times 1 = 39.85$

(e) $5.9 \times 8.65 = 5.9 \times 8.65$

(f) $11.11 \times 3.7 = 3.7 \times 11.11$

(g) $3.4 \times (1.1 + 1.9) = 3.4 \times 1.1 + 3.4 \times 1.9$

(h) $7.6 \times (1.4 + 2.6) = 7.6 \times 1.4 + 7.6 \times 2.6$

(i) $1.06 \times (7.5 - 2.5) = 1.06 \times 7.5 - 1.06 \times 2.5$

Test Prep 8.4

Sol.1. (a)
$$\begin{array}{r} 0.933 \\ 4\overline{)3.752} \\ -36 \\ \hline 15 \\ -12 \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

$3.752 \div 4 = 0.933$

(b)
$$\begin{array}{r} 0.1971 \\ 5\overline{)0.9855} \\ -5 \\ \hline 48 \\ -45 \\ \hline 35 \\ -35 \\ \hline 05 \\ -5 \\ \hline 0 \end{array}$$

$0.9855 \div 5 = 0.1971$

(c)
$$\begin{array}{r} 0.214 \\ 17\overline{)3.638} \\ -34 \\ \hline 23 \\ -17 \\ \hline 68 \\ -68 \\ \hline 0 \end{array}$$

$3.638 \div 17 = 0.214$

(d)
$$\begin{array}{r} 100.32 \\ 35\overline{)3511.20} \\ -35 \\ \hline 0112 \\ -105 \\ \hline 70 \\ -70 \\ \hline 0 \end{array}$$

$3511.20 \div 35 = 100.32$

(e)
$$\begin{array}{r} 26.653 \\ 16\overline{)426.448} \\ -32 \\ \hline 106 \\ -96 \\ \hline 104 \\ -96 \\ \hline 84 \\ -80 \\ \hline 48 \\ -48 \\ \hline 0 \end{array}$$

$426.448 \div 16 = 26.653$

(f)
$$\begin{array}{r} 0.0000384 \\ 125\overline{)0.0048000} \\ -375 \\ \hline 1050 \\ -1000 \\ \hline 500 \\ -500 \\ \hline 0 \end{array}$$

$0.0048 \div 125 = 0.0000384$

(g)
$$\begin{array}{r} 1.88 \\ 20\overline{)37.60} \\ -20 \\ \hline 176 \\ -160 \\ \hline 160 \\ -160 \\ \hline 0 \end{array}$$

$37.60 \div 20 = 1.88$

(h)
$$\begin{array}{r} 117 \\ 11\overline{)1287} \\ -11 \\ \hline 18 \\ -11 \\ \hline 77 \\ -77 \\ \hline 0 \end{array}$$

$1287 \div 11 = 117$

(i)
$$\begin{array}{r} 1.312 \\ 14\overline{)18.368} \\ -14 \\ \hline 43 \\ -42 \\ \hline 16 \\ -14 \\ \hline 28 \\ -28 \\ \hline 0 \end{array}$$

$18.368 \div 14 = 1.312$

(j)
$$\begin{array}{r} 2.2043 \\ 32\overline{)70.5376} \\ -64 \\ \hline 065 \\ -64 \\ \hline 137 \\ -128 \\ \hline 96 \\ -96 \\ \hline 0 \end{array}$$

$70.5376 \div 32 = 2.2043$

(k)
$$\begin{array}{r} 1.76344 \\ 40\overline{)70.5376} \\ -40 \\ \hline 305 \\ -280 \\ \hline 253 \\ -240 \\ \hline 137 \\ -120 \\ \hline 176 \\ -160 \\ \hline 160 \\ -160 \\ \hline 0 \end{array}$$

$70.5376 \div 40 = 1.76344$

(l)

```
        0.7086
 43 ) 30.4698
     – 30 1
       369
     – 344
        258
       –258
          0
```

30.4698 ÷ 43 = 0.7086

Sol.2. (a) 53.6 ÷ 10 = 5.36
(b) 6.64 ÷ 10 = 0.664
(c) 635.4 ÷ 10 = 63.54
(d) 0.566 ÷ 10 = 0.0566
(e) 12.35 ÷ 100 = 0.1235
(f) 354.56 ÷ 100 = 3.5456
(g) 0.505 ÷ 100 = 0.00505
(h) 235.46 ÷ 100 = 2.3546
(i) 364.56 ÷ 1000 = 0.36456
(j) 35.46 ÷ 1000 = 0.03546
(k) 3.594 ÷ 1000 = 0.003594
(l) 0.5464 ÷ 1000 = 0.0005464

Sol.3. (a) 10.825 ÷ 2.5

$$= \frac{10.825 \times 10}{2.5 \times 10} = \frac{108.25}{25} = 4.33$$

```
        4.33
 25 ) 108.25
     – 100
        82
       –75
         75
        –75
          0
```

(b) $10.199 \div 4.7 = \frac{10.199 \times 10}{4.7 \times 10} = \frac{101.99}{47}$

$= 2.17$

```
        2.17
 47 ) 101.99
     – 94
        79
      – 47
        329
      – 329
          0
```

(c) $11.47 \div 0.0031 = \frac{11.47 \times 10000}{0.0031 \times 10000}$

$$= \frac{114700}{31} = 3700$$

```
        3700
 31 ) 114700
     – 93
       217
     – 217
        000
        000
          0
```

(d) $70.091 \div 5.27 = \frac{70.091 \times 100}{5.27 \times 100} = \frac{7009.1}{527}$

$= 13.3$

```
         13.3
 527 ) 7009.1
      – 527
        1739
       –1581
         1581
        –1581
            0
```

(e) $130.563 \div 0.009 = \frac{130.563 \times 1000}{0.009 \times 1000}$

$$= \frac{130563}{9} = 14507$$

```
       14507
 9 ) 130563
    – 9
      40
    – 36
       45
     – 45
       063
      – 63
         0
```

(f) $31.482 \div 7.95 = \frac{31.482 \times 100}{7.95 \times 100}$

$$= \frac{3148.2}{795} = 3.96$$

```
          3.96
 795 ) 3148.20
      – 2385
        7632
      – 7155
        4770
      – 4770
           0
```

(g) $0.0023759377 \div 8.79$

$$= \frac{0.002375937 \times 100}{8.79 \times 100}$$

$$= \frac{0.002375937}{879} = 0.2703$$

$$\begin{array}{r} 0.2703 \\ 879\overline{)\,0.2375937} \\ -1758 \\ \hline 6179 \\ -6153 \\ \hline 2637 \\ -2637 \\ \hline 0 \end{array}$$

(h) $75.2850 \div 0.63 = \frac{75.2850 \times 100}{0.63 \times 100}$

$$= \frac{7528.50}{63} = 119.50$$

$$\begin{array}{r} 119.50 \\ 63\overline{)\,7528.50} \\ -63 \\ \hline 122 \\ -63 \\ \hline 598 \\ -567 \\ \hline 315 \\ -315 \\ \hline 0 \end{array}$$

(i) $0.0064 \div 0.08 = \frac{0.0064 \times 100}{0.08 \times 100} = \frac{0.64}{8} = 0.08$

(j) $0.000119 \div 1.7 = \frac{0.000119 \times 10}{1.7 \times 10}$

$$= \frac{0.000119}{17} = 0.00007$$

(k) $2.662 \div 0.22 = \frac{2.662 \times 100}{0.22 \times 100} = \frac{266.2}{22} = 12.1$

$$\begin{array}{r} 12.1 \\ 22\overline{)\,266.2} \\ -22 \\ \hline 46 \\ -44 \\ \hline 22 \\ -22 \\ \hline 0 \end{array}$$

(l) $0.03433876 \div 0.0083 = \frac{0.03433876 \times 10000}{0.0083 \times 10000}$

$$= \frac{343.3876}{83} = 4.1372$$

$$\begin{array}{r} 4.1372 \\ 83\overline{)\,343.3876} \\ -332 \\ \hline 133 \\ -83 \\ \hline 308 \\ -249 \\ \hline 597 \\ -581 \\ \hline 166 \\ -166 \\ \hline 0 \end{array}$$

Sol.4.

$$\begin{array}{r} 13.03 \\ 13\overline{)\,169.39} \\ -13 \\ \hline 39 \\ -39 \\ \hline 039 \\ -39 \\ \hline 0 \end{array}$$

$169.39 \div 13 = 13.03$

(a) $169.39 \div 1.3 = \frac{169.39 \times 10}{0.13 \times 10} = \frac{1693.9}{13} = 130.3$

(b) $169.39 \div 0.13 = \frac{169.39 \times 100}{0.13 \times 100} = \frac{16939}{13} = 1303$

(c) $169.39 \div 0.013 = \frac{169.39 \times 1000}{0.013 \times 1000} = \frac{169390}{13}$

$= 13030$

(d) $169.39 \div 130 = \frac{169.39}{130} = 1.303$

Sol.5. (a) $(3.05 + 1.05) \div 0.5 = 4.10 \div 0.5 = \frac{4.10 \times 10}{0.5 \times 10}$

$$= \frac{41}{5} = 8.2$$

$$\begin{array}{r} 8.2 \\ 5\overline{)\,41.0} \\ -40 \\ \hline 10 \\ -10 \\ \hline 0 \end{array}$$

(b) $5.4 \times 7.6 \div 8 = 41.04 \div 18 = 2.28$

$$\begin{array}{r} 54 \\ \times 76 \\ \hline 324 \\ 378\times \\ \hline 4104 \end{array}$$

$$\begin{array}{r} 2.28 \\ 18\overline{)41.04} \\ -36 \\ \hline 50 \\ -36 \\ \hline 144 \\ -144 \\ \hline 0 \end{array}$$

(c) $0.35 \div (1.75 \times 40) = 0.35 \div 70 = 0.005$

$$\begin{array}{r} 1.75 \\ \times 40 \\ \hline 000 \\ 700\times \\ \hline 70.00 \end{array}$$

$$\begin{array}{r} 0.005 \\ 70\overline{)0.350} \\ -350 \\ \hline 0 \end{array}$$

(d) $19.6 \div 1.4 + 1.95 \times 1.4$

$= \frac{19.6}{1.4} + 1.95 \times 1.4$

$= 14 + 2.730 = 16.73$

(e) $7.2 \div 0.9 - 1.2 \times 0.8$

$= \frac{7.2}{0.9} - 1.2 \times 0.8 = 8 - 0.96 = 7.04$

Sol.6. (a) $13.2 \div 1 = 13.2$ (b) $20.01 \div 19.50 = 1$

(c) $9.7 \div 9.7 = 1$ (d) $19.50 \div 19.50 = 1$

(e) $0 \div 2.956 = 0$ (f) $0 \div 9.6 = 0$

Test Prep 8.5

Sol.1. Diesel consume per hour = 2.835 litres

Diesel consume in 24 hours = 2.835×24 litres

= 68.04 litres

Sol.2. Weight of 1 bag of rice = 98.7 kg

Weight of 1000 bags of rice = 98.7×1000 kg

= 98700 kg

Sol.3. Distance covered in one litre of petrol

= 19.5 km

Distance covered in 25.5 litres of petrol

= 19.5×25.5 km

= 497.25 km

Sol.4. Cost of 1 kg of rice = ₹ 18.75

Cost of 7.5 kg of rice = ₹ 18.75×7.5

= ₹ 140.625

Sol.5. Cost of 16.5 litres of oil = ₹ 1150.05

Cost of 1 litre of oil = ₹ $1150.05 \div 16.5$

= ₹ 69.70

Sol.6. Length 15 equal pieces of rope = 33.75 m

Length of 1 piece of rope = $(33.75 \div 15)$ m

= 2.25

Sol.7. No. of curtains = $\frac{67.6}{2.6} = 26$

Sol.8. Share of each person = $\frac{7.5}{30}$ kg = $\frac{7.5 \times 1000}{30}$ g

= $\frac{7500}{30}$ = **250 g**

Maths Skills

Sol.1. (a) 8 hundredths (b) 5 tenths

(c) 3 (d) 4

(e) $1 + 0.9 + 0.03$

Sol.2. (a) True (b) False

(c) False (d) True

(e) True (f) False

Sol.3. (a) 6.87×10 = 68.7

(b) 9.13×1000 = 9130

(c) 0.358×100 = 35.8

(d) 0.009×100 = 0.9

(e) 97.79×1000 = 97790

(f) 9.876×1000 = 9876

Sol.4. (a) $78 \div 100$ = 0.78

(b) $53.2 \div 10$ = 5.32

(c) $81.5 \div 100$ = 0.815

(d) $69.5 \div 1000$ = 0.0695

(e) $5136 \div 1000$ = 0.5136

(f) $0.101 \div 1000$ = 0.000101

HOTS

Sol.1. $\frac{3}{4}$ of $100 = \frac{3}{4} \times 100 = \frac{300}{4} = 75$

$\frac{1}{2}$ of $75 = \frac{1}{2} \times 75 = \frac{75}{2} = 37.500$

$$\begin{array}{r} 37.5 \\ 2\overline{)75.0} \\ -6 \\ \hline 15 \\ -14 \\ \hline 10 \\ -10 \\ \hline 0 \end{array}$$

Sol.2. 0.05 and 0.23

Sol.3. 2 decades = 20 years

Now $\frac{20}{3} = 6.66.....$

I am 6.66

Hundredth decimal place = 6

Maths Olympiad

Sol.1 (a) 0.018

Sol.2. (c) 7.49

Sol.3. (b)
$$\begin{array}{r} 0.5000 \\ 0.0005 \\ +\ 5.5000 \\ \hline 6.0005 \end{array}$$

Sol.4. (d)
$$\begin{array}{r} 18 \\ \times\ \ 7 \\ \hline 126 \end{array}$$
$1.8 \times 0.07 = 0.126$

Sol.5. (c) $0.417 \div 0.00417 = \frac{0.417 \times 10000}{0.00417 \times 100000}$

$= \frac{41700}{417} = 100$

Sol.6. (b) $5 \times 0.5 \times 0.05 \times 50 = 2.5 \times 0.05 \times 50$
$= 0.125 \times 50 = 6.25$

Chapter-9 Geometrical Concepts

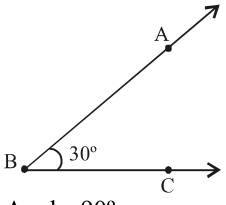
Test Prep 9.1

Sol.1. 360°

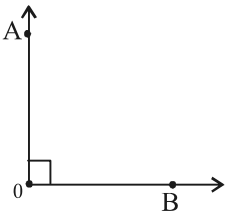
Sol.2. No

Sol.3. Protractor, degree

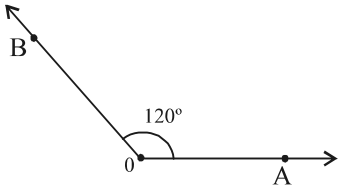
Sol.4. (1) Acute angle: Greater than 0° but less than 90°.



(2) Right Angle: 90°

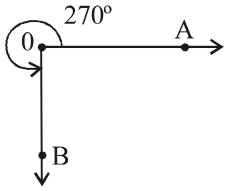


(3) Obtuse angle: Greater than 90° but less than 180°.

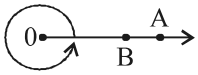


(4) Straight angle: 180°

(5) Reflex angle: Greater than 180° but less than 360° .



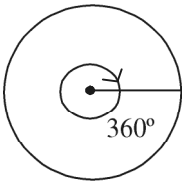
(6) Complete Angle: 360°



Sol.5. Do yourself.

Sol.6. Do yourself.

Sol.7. 360°



Sol.8. (a) Straight angle (b) Obtuse angle
(c) Acute angle (d) Obtuse angle
(e) Reflex angle (f) Acute angle
(g) Acute angle (h) Right anlge

Sol.9. (a)

90°

(b)

1 min = 6°

25 min = 25 × 6° = 150°

(c)

180°

(d)

1 min = 6°

10 min = 10 × 6° = 60°

Sol.10. (a) 50° Acute angle (b) 35° Acute angle
(c) 35° Acute angle (d) 90° Right angle
(e) 105° Obtuse angle (f) 72° Acute angle
(g) 90° Right angle (h) 90° Reflex anlge
(i) 180° straight angle

Sol.11. (a) ∠ (b) straight
(c) 90° (d) less than 90°
(e) obtuse angle (f) vertex
(g) protractor

Sol.12. (a) a, b, k (b) d, e, h (c) f, g

Test Prep 9.2

Sol.1. (a) intersecting (b) intersect (c) 90°

Sol.2. (a) 8
(b) ∥; PN ∥ AD, AD ∥ BC, PN ∥ LM,
BC ∥ LM, AP ∥ DN, AP ∥ BL, DN ∥ CM,
AB ∥ PL AB ∥ DC, DC ∥ NM, NM ∥ PL,

Sol.3. (a) 3 (b) 3 (c) 3

Sol.4. (a) AB, BC, CA (b) A, B, C
(c) ∠A, ∠B, ∠C

Sol.5. (a) Isosceles triangle (b) Scalene triangle
(c) Scalene triangle (d) Equilateral triangle
(e) Isosceles triangle (f) Isosceles triangle

Sol.6. (a) Right angled triangle
(b) Obtuse angled triangle
(c) Obtuse angled triangle
(d) Acute angled triangle
(e) Acute angled triangle
(f) Right angled triangle

Sol.7. (a) In Δ ABC,
$\angle A + \angle B + \angle C = 180^\circ$
$46^\circ + 66^\circ + \angle C = 180^\circ$
$\angle C = 180^\circ - 112^\circ = 68^\circ$
(b) In Δ PQR,
$\angle PQR + \angle PRQ + \angle QPR = 180^\circ$
$116^\circ + 31^\circ + \angle QPR = 180^\circ$
$\angle QPR = 180^\circ - 147^\circ = 33^\circ$
(c) In Δ ABC,
$\angle A + \angle B + \angle C = 180^\circ$
$70^\circ + 70^\circ + \angle C = 180^\circ$
$\angle C = 180^\circ - 140^\circ = 40^\circ$
(d) In Δ ABC,
Given $\angle A = \angle B$
$46^\circ = \angle B$

Sol.8. (a) In Δ DEF,
$\angle D + \angle E + \angle F = 180^\circ$
$\angle D + \angle 90^\circ + \angle 45^\circ = 180^\circ$
$\angle D + \angle 135^\circ = 180^\circ$
$\angle D + \angle 180^\circ + \angle 135^\circ = 45^\circ$
(b) In Δ LMN,
$\angle L + \angle M + \angle N = 180^\circ$
$45^\circ + 81^\circ + \angle N = 180^\circ$
$126^\circ + \angle N = 180^\circ$
$\angle N = 180^\circ - 126^\circ = 54^\circ$
(c) In Δ PQR,
$\angle P + \angle Q + \angle R = 180^\circ$
$30^\circ + \angle Q + 35^\circ = 180^\circ$
$65^\circ + \angle Q = 180^\circ$
$\angle Q = 180^\circ - 65^\circ = 115^\circ$
(d) In Δ ABC,
$\angle A + \angle B + \angle C = 180^\circ$
$\angle A + 47^\circ + 35^\circ = 180^\circ$
$\angle A + 100^\circ = 180^\circ$
$\angle A = 180^\circ - 100^\circ = 80^\circ$
(e) In Δ ABC,
$\angle A + \angle B + \angle C = 180^\circ$
$\angle A + 115^\circ + 40^\circ = 180^\circ$
$\angle A + 180^\circ - 155^\circ = 25^\circ$
(F) In Δ LMN,
$\angle L + \angle M + \angle N = 180^\circ$
$62^\circ \angle M + 35^\circ = 180^\circ$
$\angle M + 97^\circ = 180^\circ$
$\angle M + 180^\circ - 97^\circ = 83^\circ$

Sol.9. (a) Sum of the angles = $96^\circ + 32^\circ 45^\circ = 173^\circ$
Here, sum of the angles is not equal to 180° :
So, in this case a triangle is not possible.
(b) Sum of the angles = $77^\circ + 84^\circ + 20^\circ = 181^\circ$
Here, sum of the angles is not equal to 180° :
So, in this case a triangle is not possible.
(c) Sum of the angles = $59^\circ + 61^\circ + 60^\circ = 180^\circ$
Here, sum of the angles is not equal to 180° :
So, in this case a triangle is not possible.

Sol.10. (a) Here, $3 + 4 > 6$
$3 + 6 > 4$
$4 + 6 > 3$
Since, the Sum of two, sides is greater than the third side, therefore a triangle is possible.
(b) Here, $9 + 4 > 7$
$9 + 7 > 4$
$4 + 7 > 9$
Since, the Sum of two sides is greater than the third side, therefore a triangle is possible.

Test Prep 9.3

Sol.1. (a) Do yourself

Sol.2. (a) 0 (b) AB
(c) OA, OP, OB (d) AB, CD
(e) A,P, D, B, C (f) R,O
(g) M, N, O (h) ACB, APB
(i) 2 (j) $\frac{1}{2}$
(k) chord (l) AB

Sol.3. Radii = OA, OB, OC, OD, OE, OF
Diameters = AD

Sol.4. Chords = LM, NM, NA, CD, ND

Sol.5. (a) Diameter = 6 cm
Circumference $= \pi \times$ diameter
$= 6\pi$ cm
(b) Diameter = 9 cm
Circumference $= \pi \times$ diameter
$= \pi \times 9$ cm $= 9\ \pi$ cm
(c) Radius = 11cm
Circumference $= 2\pi r$
$= 2\pi r \times 11$ cm $= 22$ cm
(d) Radius = 5 cm
Circumference $= 2\pi \times 5$cm $= 10\pi$ cm

Sol. 6. (a) Radius = 12.8 cm
Diameter = 2 × radius = 2× 12.8 cm = 25.6 cm
(b) Radius = 9 mm
Diameter = 2 × 9 mm = 18mm
(c) Radius = 14 cm
Diameter = 2 × 14 cm = 28cm
(d) Radius = 18 m
Diameter = 2×18 m = 36 m

Sol.7. (a) Diameter = 26 m

$$\text{Radius} = \frac{\text{Diameter}}{2} = \frac{26}{2}\ \text{m} = 13\text{m}$$

(b) Diameter = 68m

$$\text{Radius} = \frac{68}{2}\ \text{cm} = 34\ \text{cm}$$

(c) Diameter = 15.4cm

$$\text{Radius} = \frac{15.4}{2}\ \text{cm} = 7.7\ \text{cm}$$

(d) Diameter = 32.2 cm

$$\text{Radius} = \frac{32.2}{2}\ \text{cm} = 16.1\text{cm}$$

Sol.8. (a) Diameter = 7 cm
Circumference = $\pi \times$ diameter = $\pi \times 7$ cm

$$= \frac{22}{7} \times 7\text{cm} = 22\text{cm}$$

(b) Diameter = $\pi \times 7.7$ cm

$$\text{Circumference} = \frac{22}{7} \times 7.7\ \text{cm} = 22 \times 1.1\ \text{cm}$$

$$= 24.2\ \text{cm}$$

(c) Diameter = 2.1 cm

$$\text{Circumference} = \pi \times 2.1\ \text{cm} = \frac{22}{7} \times 2.1\ \text{cm}$$

$$= 22 \times 0.3\ \text{cm} = 6.6\ \text{cm}$$

Sol.9. (a) Radius = 14 cm

$$\text{Circumference} = 2\pi \times r = 2 \times \frac{22}{7} \times 14\ \text{m}$$

$$= 2 \times 22 \times 2\ \text{m} = 88\ \text{m}$$

(b) Radius = 8.4 cm

$$\text{Circumference} = 2 \times \frac{22}{7} \times 8.4\ \text{cm}$$

$$= 2 \times 22 \times 1.2\ \text{cm}$$

$$= 44 \times 1.2\ \text{cm} = 52.8\ \text{cm}$$

(c) Radius = 6.3 cm

$$\text{Circumference} = 2 \times \frac{22}{7} \times 6.3\ \text{cm}$$

$$= 44 \times 0.9\ \text{cm} = 39.6\ \text{cm}$$

Sol.10. (a) Circumference = 6.6

$$2\pi \times \text{r} = 6.6$$

$$2 \times \frac{22}{7} \times \text{r} = 6.6$$

$$\text{r} = \frac{6.6 \times 7}{2 \times 22} = \frac{46.2}{44} = 1.05\text{cm}$$

(b) Circumference = 8.8 cm

$$2 \times \text{r} = 8.8\text{cm}$$

$$2 \times \frac{22}{7} \times \text{r} = 8.8$$

$$\text{r} = \frac{8.8 \times 7}{2 \times 22} = \frac{61.6}{44} = 1.4\text{cm}$$

(c) Circumference = 220 cm

$$2 \times \text{r} = 220$$

$$2 \times \frac{22}{7} \times \text{r} = 220$$

$$\text{r} = \frac{220 \times 7}{44} = \frac{1540}{44} = 35\text{cm}$$

Sol.11. (a) Circumference = 6.6 cm

$\pi \times$ diameter = 6.6 cm

$\frac{22}{7} \times$ diameter = 6.6

$$\text{Diameter} = \frac{6.6 \times 7}{22} = \frac{46.2}{22} \text{ cm}$$

$$= 2.1 \text{ cm}$$

(b) Circumference = 1.32 cm

$\pi \times$ diameter = 1.32 cm

$\frac{22}{7} \times$ diameter = 1.32

$$\text{Diameter} = \frac{1.32 \times 7}{22} = \frac{9.24}{22} \text{ cm} = 0.42 \text{ cm}$$

(c) Circumference = 3.3 cm

$\pi \times$ diameter = 3.3 cm

$\frac{22}{7} \times$ diameter = 3.3

$$\text{diameter} = \frac{3.3 \times 7}{22} = \frac{23.1}{22} = 1.05 \text{ cm}$$

Test Prep 9.4

Sol.1. (a) $\angle P, \angle Q, \angle R, \angle S$

(b) PQ, QR, RS, SP

(c) PS, QR

Sol.2. (a) Rhombus (b) Rectangle (c) Square

Sol.3. (a) Each of the angles of a square is a right angle while in rhombus there is no angle of 90°.

(b) In parallelogram opposite sides are equal while in kite it is not so.

Sol.4. (a) False (b) True (c) True (d) False

(e) False (f) True (g) True (h) False

Sol.5. (a) equal (b) 90° (c) parallel (d) rhombus

Sol.6. (a) 90° (b) 90° (c) RS (d) parallel

Maths Skills

Sol.1. (a) 1° or 89° (b) 90°

(c) 91° to 179° (d) 180°

Sol.2. (a) True (b) True (c) False (d) False

Sol.3. (a) $\angle A + \angle A + \angle A = 80° + 55° + 45° = 180°$

Sum of the angles is 180°, So the given three angles are of a triangle .

(b) $\angle P + \angle Q + \angle R = 75° + 60° + 50° = 185°$

Sum of the angles is not equal 185°, So the given three angles are not of a triangle.

(c) $\angle X + \angle Y + \angle Z = 80° + 40° + 45° = 165°$

Sum of the angles is not equal 165° , So the given three angles are not of a triangle.

Sol.4. (a) Three (b) one (c) one

Sol.5. In ΔPQR,

$\angle P + \angle Q + \angle R = 180°$

$35° + 67° + \angle R = 180°$

$\angle R = 180° - 102° = 78°$

Sol.6. In ΔXYZ,

$\angle X + \angle Y + \angle Z = 180°$

$105° + \angle Y + 25° = 180°$

$\angle Y = 180° - 130° = 50°$

Sol.7. Let in ΔABC, $\angle A = 90°$, $\angle B = 35°$, $\angle C = ?$

Since, $\angle A + \angle B + \angle C = 180°$

$90° + 35° + \angle C = 180°$

$\angle C = 180° - 125° = 55°$

Thus, the remaining two angles are 90° and 55°.

Sol.8. (a) Radius = 7 cm

$$\text{Circumference} = 2\pi \times r = 2 \times \frac{22}{7} \times 7 = 44 \text{ cm}$$

(b) Radius = 6.3 cm

$$\text{Circumference} = 2 \times \frac{22}{7} \times 6.3 = 44 \times 0.9 \text{ cm} = 39.6 \text{ cm}$$

(c) Radius = 5.6 cm

$$\text{Circumference} = 2 \times \frac{22}{7} \times 5.6 \text{ cm} = 44 \times 0.8 \text{ cm} = 33.2 \text{ cm}$$

(a) Radius = 4.2 cm

$$\text{Circumference} = 2 \times \frac{22}{7} \times 4.2 \text{cm} = 44 \times 0.6 \text{ cm} = 26.4 \text{ cm}$$

HOTS

Sol.1. ||

Sol.2. Triangles = 3, Circles = 4

Maths Olympiad

Sol.1. (a) 

(d) 180°

Sol 2. (c) 180°

Sol.3. (b) 90°

Sol.4. 90° + 90° = 180° (straight angle)

Sol 5. 180°

Sol 6. (c) reflex angle

Sol 7. (d)

Sol 8. (c)

Examination Preparation - I

Sol.1. (i) (b) 5, 12, 346 (ii) (a) V (iii) (b) 0.63
(iv) (c) o (v) (c) 90°

Sol.2. (a) 90° (b) diameter
(c) 6 (d) product
(e) 9979999

Sol.3. (a) False (b) False (c) True
(d) True (e) True

Sol.4. (a) 90° (b) (a) 90°
(c) DC (d) parallel

Sol.5. (a) Radii = OA, OS, OR, OT , OB
(b) Diameter = AB, RS
(c) Chords = PQ, RS, SB, AB,

Sol.6.

$$\begin{array}{r} 5.231 \\ +15.750 \\ \hline 20.981 \end{array} \qquad \begin{array}{r} 3.75 \\ +23.85 \\ \hline 27.60 \end{array}$$

$$\begin{array}{r} 27.600 \\ -\ 20.981 \\ \hline 6.619 \end{array}$$

Sol.7. (a)

$$\begin{array}{r} 168 \\ \times\ 36 \\ \hline 1008 \\ 5040\times \\ \hline 61408 \end{array}$$

$16.8 \times 3.6 = 6.048$

(b)

$$\begin{array}{r} 1482 \\ \times 342 \\ \hline 2964 \\ 59280 \\ 444600 \\ \hline 506844 \end{array}$$

$148.2 \times 3.42 = 506.844$

Sol. 8. (a) $23.8384 \div 12.8 = \dfrac{23.8384 \times 10}{12.8 \times 10} = \dfrac{238.384}{128}$

$= 1.862375$

$$\begin{array}{r} 1.862375 \\ 128\overline{)\ 238.384000} \\ -\ 128 \\ \hline 1103 \\ -\ 1024 \\ \hline 798 \\ -\ 768 \\ \hline 304 \\ -\ 256 \\ \hline 480 \\ -\ 384 \\ \hline 960 \\ -\ 896 \\ \hline 640 \\ -\ 640 \\ \hline 0 \end{array}$$

(b) $0.4572 \div 1.2 = \dfrac{0.4572 \times 10}{1.2 \times 10} = \dfrac{4.572}{12} = 0.381$

$$\begin{array}{r} 0.381 \\ 1.2\overline{)\ 4.572} \\ -\ 36 \\ \hline 97 \\ -\ 96 \\ \hline 12 \\ -\ 12 \\ \hline 0 \end{array}$$

Sol. 9. Weight of 6 bottles = 12.06 kg
Weight of 1 bottle = $12.06 \div 6 = 2.01$kg

Sol.10. Cost of 12 toys = ₹ 29640.60
Cost of 1 toy = ₹ $29640.60 \div 7$ = ₹ 220.05
Cost of 7 toys = ₹ 220.05×7 = ₹ 1540.35

Sol.11. $5\frac{1}{3} + 1\frac{2}{5} = \frac{16}{3} + \frac{7}{5} = \frac{16 \times 5 + 3 \times 7}{15}$

LCM of 3 and 5 = 15

$$= \frac{80 + 21}{15} = \frac{101}{15} = 6\frac{11}{15}$$

Now, $16\frac{9}{20} - 6\frac{11}{15} = \frac{329}{20} - \frac{101}{15}$

LCM of 20 and 15 = 60

$$= \frac{329 \times 3 - 101 \times 4}{60}$$

$$= \frac{987 - 404}{60} = \frac{583}{60} = 9\frac{43}{60}$$

Sol.12. Weight of 7 books = $11\frac{2}{3}$ kg

Weight of 1 book = $\left(11\frac{2}{3} \div 7\right)$kg

$= \left(\frac{35}{3} \times \frac{1}{7}\right)$kg = $\frac{5}{3}$ kg = $1\frac{2}{3}$ kg

Sol.13. HCF × LCM = Product of numbers
$25 \times 375 = 15 \times$ other number

other number = $\dfrac{25 \times 375}{15} = 625$

Sol.14. Interest = $\dfrac{P \times R \times T}{100} = \dfrac{2500 \times 8 \times 2}{100}$ = ₹ 4000

Amount = Principal + Interest
= ₹ 25000 + ₹ 4000 = ₹29,000

Sol.15. The Smallest number is the LCM of the given numbers.

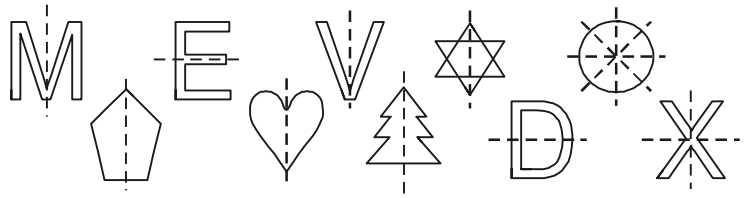
2	12,18, 27, 35
3	6, 9, 27, 35
3	2, 3, 9, 35
	2, 1, 3, 35

LCM = 2× 3× 3 × 2 × 3 × 35 = 3780
Number 3780 is completely divisible by 12, 18, 27 and 35.
But the given number is divided by 12, 18, 27, and 35, the remainder is 5.
Thus, the required number = 3780 + 5 = 3785.

Chapter-10 Symmetry And Pattern

Test Prep 10.1

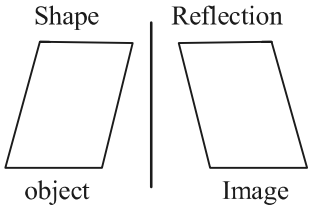
Sol.1.

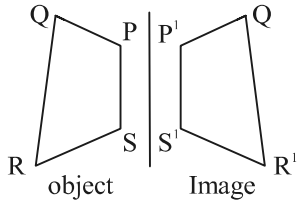


Sol.2.

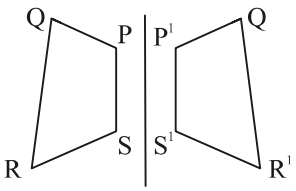
Sol.3. (a) False (b) False (c) True

Sol.4.

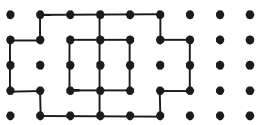




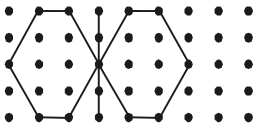
Sol.5.



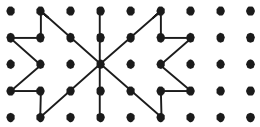
Sol.6. (a)



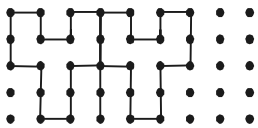
(b)



(c)



(d)



Sol.7. (a) No (b) Yes, Order = 2
(c) Yes, Order = 4 (d) Yes, Order = 5

Sol.8. Yes

Sol.9. Yes

Sol.10. Yes

Sol.11. A.

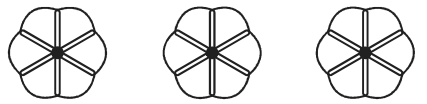
Sol.12. H, I, N, S, X.

Sol.13. Parallelogram

Sol.14. Do yourself

Sol.15. Shapes $\frac{1}{3}$ turn $\frac{1}{6}$ turn

(a) 

(b) 

(c) 

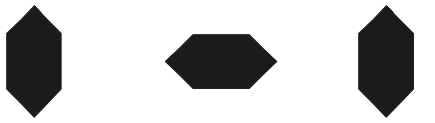
(d) 

Sol.16. Shapes on $\frac{1}{4}$ turn On half turn

(a) 

(b) 

(c) 

(d) 

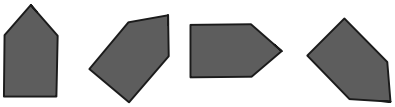
Test Prep 10.2

Sol.1. 

Sol.2. (a) $\frac{1}{2}$ turn (b) $\frac{1}{4}$ turn

Sol.3. 

Sol.4. 

Sol.5. 

Sol.6. (a)

$\frac{1}{4}$	$\frac{1}{2}$	1	2	4	8

(b)

$3\frac{1}{2}$	3	$2\frac{1}{2}$	2	$1\frac{1}{2}$	1

(c)

990	99	9.9	.99	0.099	0.0099

(d)

.001	.01	.1	1	10	100

(e)

10	19	30	43	58	75	94

(f)

6	22	46	78	188	166	222

Sol.7. $15 \times 15 = 225$, $25 \times 25 = 625$,
$35 \times 35 = 1225$, $75 \times 75 = 5625$

(a) $45 \times 45 = 2025$

(b) $55 \times 55 = 3025$

(c) $65 \times 65 = 4225$

(d) $85 \times 85 = 7225$

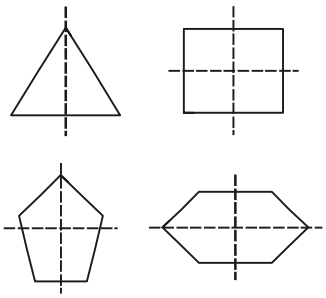
Sol.8. (a)

8	1	6
3	5	7
4	9	2

(b)

22	29	6	13	20
28	10	12	19	21
9	11	18	25	27
15	17	24	26	8
16	23	30	7	14

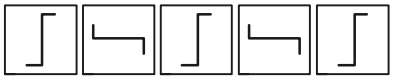
Maths Skills

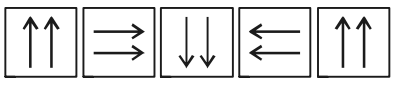
Sol.1. (a) 

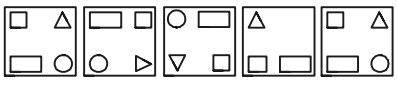
Sol.2. (a) have rotational symmetry

(b) does not have rotational symmetry

(c) have rotational symmetry

Sol.3. (a) 

(b) 

(c) 

Sol.4. (a) 7, 12, 17, 22 , 27 , 32
(b) 10, 20, 30, 40, 50, 60
(c) 29, 24, 19, 14

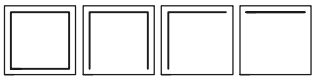
Sol.5. (a)

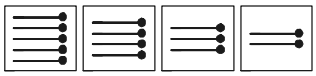
		864	
	12		72
2		6	12
1	2	3	4

(b)

		68	
	32		36
15		17	19
7	8	9	10

Sol.6. (a) 

(b) 

(c) 

Maths Olympiad

Tick (✓) The correct answer:

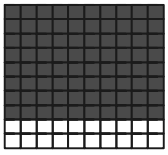
Sol.1. (c) 3

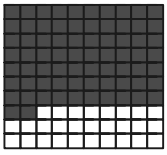
Sol.2. (a) mirror images

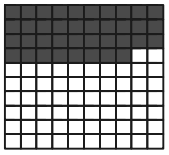
Sol.3. (d) 4

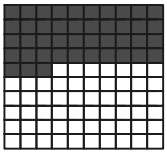
Chapter-11 Percentage

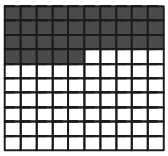
Test Prep 11.1

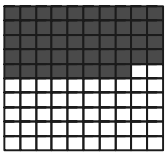
Sol.1. (a) 
80%

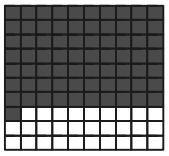
(b) 
72%

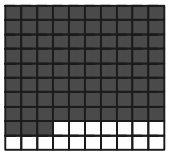
(c) 
38%

(d) 
43%

Sol.2. (a) 

(b) 

(c) 

(d) 

Sol.3. (a) $\frac{6}{100}=\left(\frac{6}{100}\times 100\right)\%=\left(\frac{6\times 100}{100}\right)\%=6\%$

(b) $\frac{90}{100}=\left(\frac{90}{100}\times 100\right)\%=90\%$

(c) 84 out of $100=\left(\frac{84}{100}\times 100\right)\%=84\%$

(d) 67 out of $100=\left(\frac{67}{100}\times 100\right)\%=67\%$

Sol.4. (a) $\frac{9}{50}=\left(\frac{9}{50}\times 100\right)\%=(9\times 2)\%=18\%$

(b) $\frac{6}{12}=\left(\frac{6}{12}\times 100\right)\%=\left(\frac{100}{2}\right)\%=50\%$

(c) $\frac{4}{5}=\left(\frac{4}{5}\times 100\right)\%=(4\times 20)\%=80\%$

(d) $\frac{13}{25}=\left(\frac{13}{25}\times 100\right)\%=(13\times 4)\%=52\%$

(e) $7\frac{1}{4}=\frac{29}{4}=\left(\frac{29}{4}\times 100\right)\%$
$=(29\times 25)\%=725\%$

(f) $2\frac{2}{5}=\frac{12}{5}=\left(\frac{12}{5}\times 100\right)\%=(12\times 20)\%=240\%$

(g) $1\frac{3}{20}=\frac{23}{20}=\left(\frac{23}{20}\times 100\right)\%$
$=(23\times 5)\%=115\%$

(h) $2\frac{5}{8}=\frac{21}{8}=\left(\frac{21}{8}\times 100\right)\%$
$=\left(\frac{21\times 25}{2}\right)\%=262.5\%$

Sol.5. (a) $0.05=\frac{5}{100}=\left(\frac{5}{100}\times 100\right)=5\%$

(b) $2.5=\frac{25}{10}=\left(\frac{25}{10}\times 100\right)\%=250\%$

(c) $1.25=\frac{125}{100}=\left(\frac{125}{10}\times 100\right)\%=125\%$

(d) $0.8=\frac{8}{10}=\left(\frac{8}{10}\times 100\right)\%=80\%$

(e) $0.76 = \frac{76}{100} = \left(\frac{76}{100} \times 100\right)\% = 76\%$

(f) $0.06 = \frac{6}{100} = \left(\frac{6}{100} \times 100\right)\% = 6\%$

(g) $0.325 = \frac{325}{1000} = \left(\frac{325}{1000} \times 100\right)\% = 32.5\%$

(h) $0.004 = \frac{4}{1000} = \left(\frac{4}{1000} \times 100\right)\% = 0.4\%$

Test Prep 11.2

Sol.1. (a) $35\% = \frac{35}{100} = \frac{35 \div 5}{100 \div 5} = \frac{7}{20}$

(b) $48\% = \frac{48}{100} = \frac{48 \div 4}{100 \div 4} = \frac{12}{25}$

(c) $72\% = \frac{72}{100} = \frac{72 \div 4}{100 \div 4} = \frac{18}{25}$

(d) $84\% = \frac{84}{100} = \frac{84 \div 4}{100 \div 4} = \frac{21}{25}$

(e) $135\% = \frac{135}{100} = \frac{135 \div 5}{100 \div 5} = \frac{27}{20}$

(f) $225\% = \frac{225}{100} = \frac{225 \div 25}{100 \div 25} = \frac{9}{4}$

(g) $3\frac{1}{9} = \frac{28}{9}\% = \frac{28}{9 \times 100} = \frac{28}{900}$
$= \frac{28 \div 4}{900 \div 4} = \frac{7}{225}$

(h) $4\frac{4}{5}\% = \frac{24}{5}\% = \frac{24}{5 \times 100} = \frac{24 \div 4}{500 \div 4} = \frac{6}{125}$

(i) $12\frac{1}{2}\% = \frac{25}{2}\% = \frac{25}{2 \times 100} = \frac{1}{2 \times 4} = \frac{1}{8}$

Sol.2. (a) $37.5\% = \frac{37.5}{100} = \frac{375}{100 \times 10} = \frac{375}{1000}$
$= \frac{375 \div 25}{1000 \div 25} = \frac{15 \div 5}{40 \div 5} = \frac{3}{8}$

(b) $4.5\% = \frac{4.5}{100} = \frac{45}{100 \times 10} = \frac{45 \div 5}{1000 \div 5} = \frac{9}{200}$

(c) $6.25\% = \frac{6.25}{100} = \frac{625}{100 \times 100} = \frac{625}{10000}$
$= \frac{625 \div 25}{10000 \div 25} = \frac{25 \div 25}{400 \div 25} = \frac{1}{16}$

(d) $0.3\% = \frac{0.3}{100} = \frac{3}{1000}$

(e) $0.25\% = \frac{0.25}{100} = \frac{25}{100 \times 100} = \frac{25 \div 25}{1000 \div 25}$
$= \frac{1}{400}$

(f) $9.6\% = \frac{9.6}{100} = \frac{96}{100 \times 10} = \frac{96 \div 4}{1000 \div 4} = \frac{24}{250}$
$= \frac{24 \div 2}{250 \div 2} = \frac{12}{125}$

Sol.3. (a) $24\% = \frac{24}{100} = 0.24$

(b) $65\% = \frac{65}{100} = 0.65$

(c) $75\% = \frac{75}{100} = 0.75$

(d) $22.5\% = \frac{22.5}{100} = 0.225$

(e) $125\% = \frac{125}{100} = 1.25$

(f) $36.5\% = \frac{36.5}{100} = 0.365$

(g) $1.2\% = \frac{1.2}{100} = 0.012$

(h) $33.5\% = \frac{33.5}{100} = 0.335$

(i) $60.5\% = \frac{60.5}{100} = 0.605$

Test Prep 11.3

Sol.1. (a) 9% of $70 = \frac{9}{100} \times 70 = \frac{630}{100} = 6.3$

(b) 5% of $120 = \frac{5}{100} \times 120 = \frac{600}{100} = 6$

(c) 15% of $15 = \frac{15}{100} \times 15 = \frac{225}{100} = 2.25$

(d) 8% of $225 = \frac{8}{100} \times 225 = \frac{1800}{100} = 18$

(e) 24% of $175 = \frac{24}{100} \times 175 = \frac{24 \times 7}{4} = 6 \times 7 = 42$

(f) 16% of $550 = \frac{16}{100} \times 550 = \frac{16 \times 55}{10} = \frac{16 \times 11}{2}$
$= 8 \times 11 = 88$

Sol.2. (a) 20% of ₹80 $= ₹\left(\frac{20}{100}\times 80\right) = ₹\left(\frac{80}{5}\right) = ₹16$

(b) 70% of 90 kg $= \left(\frac{70}{100}\times 90\right)$ kg $= \left(\frac{6300}{100}\right)$kg

$= 63$ kg

(c) 14% of 850 kg $= \left(\frac{14}{100}\times 850\right)$ kg

$= \left(\frac{14\times 34}{4}\right)$kg $= (7\times 17)$ kg $= 119$ kg

(d) 60% of 1 year $= \left(\frac{60}{100}\times 365\right)$ days

$= \frac{6\times 365}{10} = (3\times 73)$ days $= 219$ days

(e) 10 % of 1 litre $= \left(\frac{10}{100}\times 1000\right)$ mL

$= \frac{10000}{100}$ mL $= 100$ mL

(f) 8 % of a metre $= \left(\frac{8}{100}\times 1000\right)$ mm

$= \frac{8000}{100} = 80$ mm

Sol.3. (a) Given number = 5

Percentage number = 20

Required percentage $= \left(\frac{20}{5}\times 100\right)\%$

$= \frac{2000}{5}\% = 400\%$

(b) Required percentage $= \left(\frac{27}{50}\times 100\right)\%$

$= (27\times 2)\% = 54\%$

(c) Required percentage $= \left(\frac{11}{15}\times 100\right)\%$

$= \left(\frac{11\times 20}{3}\right)\% = \frac{220}{3}\% = 73\frac{1}{3}\%$

(d) Required percentage $= \left(\frac{37}{40}\times 100\right)\%$

$= \left(\frac{37\times 5}{2}\right)\% = \left(\frac{185}{2}\right)\% = 92\frac{1}{2}\%$

(e) Required percentage $= \left(\frac{400}{1000}\times 100\right)\%$

$= \left(\frac{400}{10}\right)\% = 40\%$

(f) Required percentage $= \left(\frac{225}{2.5\times 1000}\times 100\right)\%$

$= \left(\frac{225\times 100}{2500}\right)\% = 9\%$

Sol.4. Total students = 60

No. of girls $= 45\%$ of $60 = \frac{45}{100}\times 60 = \frac{45\times 3}{5}$

$= 9\times 3 = 27$

No. of boys $= 60 - 27 = 33$

Sol.5. Earning = ₹10,800

Expenditure = 75% of ₹10,800 $= \left(\frac{75}{100}\times 10800\right)$

= ₹ 8100

Saving = ₹ 10800 – ₹ 8100 = ₹ 2700

Sol.6. Metal = 325 g

Zinc = 36 % of 325 g $= \left(\frac{36}{100}\times 325\right)$ g $= 117$g

Copper = 325 g – 117 g = 208 g

Sol.7. Population 1 year ago = 25300

2 % of 25300 $= \frac{2}{100}\times 25300 = 506$

Population now = 25300 + 506 = 25806

Sol.8. Precentage in English $= \left(\frac{41}{50}\times 100\right)\%$

$= (41\times 2)\% = 82\%$

Sol.9. Total runs = 280

Kohli scored = 70

Percentage of runs scored by kohli

$= \left(\frac{70}{280}\times 100\right)\% = 25\%$

Sol.10. Total pages = 400

Pages read = 180

Pages not read = 400 – 180 = 220

Percentage of pages no read $= \left(\frac{220}{400}\times 100\right)\%$

$= 55\%$

Creative Activity

Sol.1. Total families = 400

1. Percentage of families having 4 or more than 4 cars = (12 + 23)% = 35 %

   $35\%\text{ of }400 = \frac{35}{100} \times 400 = 140$

   So, 140 families have 4 or more than 4 cars.
2. No. of families having 3 cars = 20% of 400

   $= \frac{20}{100} \times 400$

   $= 80$

   No. of families having 1 car = 27% of 400

   $= \frac{27}{100} \times 400 = 108$

   Difference = 108 – 80 = 28
3. No. of families having 2 cars = 18 % of 400

   $= \frac{18}{100} \times 400 = 72$

   No. of families having 1 car = 108

   Required ratio $= \frac{72}{108} = \frac{2}{3} = \frac{2}{3}$ times

Maths Skills

Sol.1. (a) $\frac{7}{10} = \left(\frac{7}{10} \times 100\right)\% = 70\%$

(b) $\frac{13}{20} = \left(\frac{13}{20} \times 100\right)\% = (13 \times 5)\% = 65\%$

(c) $\frac{21}{25} = \left(\frac{21}{25} \times 100\right)\% = (21 \times 4)\% = 84\%$

(d) $\frac{39}{50} = \left(\frac{39}{50} \times 100\right)\% = (39 \times 2)\% = 78\%$

Sol.2. (a) $0.39 = \frac{39}{100} = \left(\frac{39}{100} \times 100\right)\% = 39\%$

(b) $0.45 = \frac{45}{100} = \left(\frac{45}{100} \times 100\right)\% = 45\%$

(c) $0.66 = \frac{66}{100} = \left(\frac{66}{100} \times 100\right)\% = 66\%$

(d) $0.94 = \frac{94}{100} = \left(\frac{94}{100} \times 100\right)\% = 94\%$

Sol.3. (a) $24\% = \frac{24}{100} = \frac{24 \div 4}{100 \div 4} = \frac{6}{25}$

(b) $48\% = \frac{48}{100} = \frac{48 \div 4}{100 \div 4} = \frac{12}{25}$

(c) $75\% = \frac{75}{100} = \frac{75 \div 25}{100 \div 25} = \frac{3}{4}$

(d) $95\% = \frac{95}{100} = \frac{95 \div 5}{100 \div 5} = \frac{19}{20}$

Sol.4. (a) $38\% = \frac{38}{100} = 0.38$ (b) $55\% = \frac{55}{100} = 0.55$

(c) $81\% = \frac{81}{100} = 0.81$ (d) $97\% = \frac{97}{100} = 0.97$

Sol.5. (a) $5\%\text{ of }120 = \frac{5}{100} \times 120 = 6$

(b) $15\%\text{ of } ₹340 = \frac{15}{100} \times 340 = \frac{3 \times 340}{20}$

$= 3 \times 17 = ₹51$

(c) $20\%\text{ of } ₹500 = \frac{20}{100} \times 500 = \frac{500}{5} = ₹100$

(d) $26\%\text{ of }400\text{ kg} = \frac{26}{100} \times 400$

$= (26 \times 4)\text{ kg} = 104\text{ kg}$

(e) $32\%\text{ of }660\text{ m} = \left(\frac{32}{100} \times 660\right)\text{m}$

$= \left(\frac{8 \times 660}{25}\right)\text{m} = \frac{5280}{25}\text{ m} = 211.2\text{ m}$

(f) $75\%\text{ of }840\text{ L} = \left(\frac{75}{100} \times 840\right)\text{ L} = \left(\frac{3 \times 840}{4}\right)\text{L}$

$= (3 \times 210)\text{ L} = 630\text{ L}$

Sol.6. Total marks = 300

Pihu scored = 240

$\text{Percentage} = \left(\frac{240}{300} \times 100\right)\% = \left(\frac{240}{3}\right)\% = 80\%$

Sol.7. Total games = 10

$\text{Team won} = 80\%\text{ of }10 = \frac{80}{100} \times 10 = 8$

Team lost = 10 – 8 = 2

Sol.8. Cost of goods = ₹ 2000

Extra charge = 5% of ₹ 2000 = ₹ $\left(\frac{5}{100}\times 2000\right)$

= ₹ 100

Sol.9. Price of home = ₹ 37,00,500

Cash payment 20% of ₹ 37,00,500

= ₹ $\left(\frac{20}{100}\times 37,00,500\right)$

= ₹ 740100

Money paid by cheque = ₹ 3700500 – ₹ 740100

= ₹ 2960400

Sol.10. Weight of bracelet = 10 g

Gold = 89% of 10 g = $\left(\frac{89}{100}\times 10\right)$ g = 8.9 g

Weight of gold = (10 – 8.9) g = 1.1 g

Maths Olympiad

Tick (✓) the correct answer.

Sol.1. (c) 0.16 %

Sol.2. 0.009 = (0.009 × 100) % = 0.9 % (b)

Sol.3. 0.057 = (0.057 × 100) % = 5.7 % (b)

Sol.4. (c) $1\frac{2}{4}=\frac{6}{4}=\left(\frac{6}{4}\times 100\right)\%=(6\times 25)\%=150\%$

Sol.5. (a) 40 % of 100 litres = $\left(\frac{40}{100}\times 100\right)$ = 40 litres

Sol.6. (a) Required percentage = $\left(\frac{10}{200}\times 100\right)\%$

= 5%

Sol.7. (d) 80 % of 500 = $\left(\frac{80}{100}\times 500\right)$ = 80 × 5 = 400

The boy got 400 marks.

Chapter-12 Money

Test Prep 12.1

Sol.1. (a)
₹ 645.75
₹ 760.50
+ ₹ 135.50
₹ 1541.75

(b)
₹ 4375.50
₹ 8436.50
+ ₹ 9647.75
₹ 22459.75

Sol.2. (a)
₹ 8000.50
₹ 6366.50
+ ₹ 2322.50
₹ 16689.50

(b)
₹ 9600.50
+ ₹ 35.50
₹ 205.50
₹ 9841.50

Sol.3. (a)
₹ 684.75
– ₹ 294.50
₹ 390.25

(b)
₹ 188.00
– ₹ 88.00
₹ 100.00

Sol.4.
₹ 2144.50
– ₹ 1984.75
₹ 159.75

Sol.5.
₹ 6888.50
– ₹ 12.75
₹ 6875.75

Sol.6. (a) (i)
355.50
× 7
2488.50

₹ 355.50 × 7
= ₹ 2488.50

(ii)
96075
× 8
7686.00

₹ 960.75 × 8
= ₹ 7686.00

(iii)
6675
× 9
60075

₹ 66.75 × 9 = ₹ 600.75

(iv)
21250
× 11
21250
212500
233750

₹ 212.50 × 11 = ₹ 2337.50

(b) (i)
$$\begin{array}{r} 157.50 \\ 5\overline{)\,787.50} \\ -5 \\ \hline 28 \\ -25 \\ \hline 37 \\ -35 \\ \hline 25 \\ -25 \\ \hline 0 \end{array}$$

₹ 787.50 ÷ 5 = ₹ 157.50

(ii)
$$\begin{array}{r} 4 \\ 6\overline{)\,24} \\ -24 \\ \hline 0 \end{array}$$

₹ 24 ÷ 6 = ₹ 4

(iii)
$$\begin{array}{r} 910.75 \\ 8\overline{)7286.00} \\ -72 \\ \hline 08 \\ -8 \\ \hline 060 \\ -56 \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

₹ 7286.00 ÷ 8
= ₹ 910.75

(iv)
$$\begin{array}{r} 725.50 \\ 9\overline{)6529.50} \\ -63 \\ \hline 22 \\ -18 \\ \hline 49 \\ -45 \\ \hline 45 \\ -45 \\ \hline 0 \end{array}$$

₹ 6259.50 ÷ 9
= ₹ 725.50

Test Prep. 12.2

Sol.1. Cost of bureau = ₹ 6750
Cost of table = ₹ 4550
Cost of chair = + ₹ 950
Total value = ₹ 12250

Sol.2.
₹ 35.00
₹ 75.50
₹ 275.00
₹ 52.00
+ ₹ 9.50
Total price = ₹ 447.00

Sol.3.
₹ 80.00
– ₹ 76.35
₹ 3.65
Punit Should deposit = ₹ 3.65

Sol.4. Monthly salary = ₹ 25000
Saving = – ₹ 6435
Money spent = ₹ 18565

Sol.5. Cost of 1 Kg tomato = ₹ 15.50
Cost of 13 kg tomato = ₹ 15.50 × 13
= ₹ 201.50

Sol.6. Cost of 1 rice bag = ₹ 1750
Cost of 24 rice bags = ₹ 1750 × 24 = ₹ 42,000

Sol.7. Cost of 8 g sweets = ₹ 1200
Cost of 1 g sweets = ₹ 1200 ÷ 8 = ₹ 150

Sol.8.
$$\begin{array}{r} 2550 \\ 12\overline{)30600} \\ -24 \\ \hline 66 \\ -60 \\ \hline 60 \\ -60 \\ \hline 0 \end{array}$$

Monthly contribution = ₹ 30600 ÷ 12 = ₹ 2550

Test Prep 12.3

Sol.1.

Sudha Provision Store
Ajmer (Rajasthan)
Bill No.: 301 **Mob. : ABC**
To, Sohan **Date : ABC**
Ajmer

S.No.	Name of items	Quantity	Rate	Amount ₹	Amount P
1.	Rice	12 kg	₹ 85	1020	00
2.	Sugar	2 kg	₹ 44	88	00
3.	Flour	1 kg	₹ 28.50	28	50
			Total	1136	50

For Sudha Provision (Prop.)

Sol.2.

Manglam Fruit Shop
Udaipur (Rajasthan)
Bill No.: 302 **Mob. : ABC**
To, Renu **Date : ABC**
Udaipur

S.No.	Name of items	Quantity	Rate	Amount ₹	Amount P
1.	Oranges	10 pes	₹ 9.30	93	00
2.	Banana	2 dozen	₹ 25	50	00
3.	Mangoes	5 kg	₹ 53	265	00
			Total	408	00

For Manglam Fruit shop (Prop.)

Sol.3.

Chandran Mart
Sikar (Rajasthan)
Bill No.: 208 **Mob. : ABC**
To, Ruchi Sikar **Date : ABC**

S.No.	Name of items	Quantity	Rate	Amount ₹	Amount P
1.	Total soap	6 pcs	₹ 116 per doz	58	00
2.	Tooth paste	1 pcs	₹ 38.50	38	00
3.	Detergent	6 pcs	₹ 8	48	00
4.	Cleaning powder	2 packs	₹ 21	42	00
			Total	186	50

For Chandran Mart (Prop.)

Sol.4.

M.L. Paper Mart
Jhunjhunu (Rajasthan)
To, _____ **Date : 15.02.20**

S.No.	Quantity	Particular	Rate	Amount	
				₹	P
1.	12	Pencils	₹2.50	30	00
2.	10	Copies	₹6.00	60	00
3.	4	Colour Box	₹34.00	136	00
			Total	226	00
For M.L. Paper Mart shop (Prop.)					

Test Prep. 12.4

Sol.1. (a) Here, SP > CP
$\therefore$ Profit = SP – CP = ₹28 – ₹26 = ₹26
(b) Here, CP > SP
Loss = ₹152 – ₹148 = ₹4
(c) Here, SP > CP
Profit = ₹1000 – ₹975.75 = ₹24.25
(d) Here, CP > SP
Profit = ₹426.25 – ₹412.50 = ₹13.75

Sol.2. CP = ₹565 and SP = ₹572
Here, SP > CP
Profit = ₹572 – ₹565 = ₹7

Sol.3. CP = ₹45000 + ₹625 = ₹45625
SP = ₹49995
Here, SP > CP = ₹49995 – ₹45625 = ₹4370

Sol.4. CP = ₹5490 + ₹360 = ₹5850
SP = ₹5509
Here, CP > SP
Loss = ₹5850 – ₹5509 = ₹341

Sol.5. CP = ₹1294, Loss = ₹176
Loss = CP – SP
SP = CP – Loss = ₹1294 – ₹176 – ₹1118

Sol.6. (a) CP = ₹90 + ₹7 = ₹97
SP = ₹100
Profit = ₹100 – ₹97 = ₹3
(b) CP = ₹735 + ₹26 = ₹761
Profit = ₹666
SP = CP + profit = ₹761 + ₹66 = ₹827
(c) CP = ₹9540 and Loss = ₹703
Loss = CP – SP
SP = CP – Loss = ₹9540 – ₹703 = ₹8837
(d) SP = ₹442 and loss = ₹10
Loss = CP – SP
CP = SP + Loss = ₹442 + ₹10 = ₹452
(e) SP = ₹954 and profit = ₹65
Profit = SP – CP
CP = SP – Profit = ₹954 – ₹65 = ₹889

Test Prep 12.5

Sol.1. (a) Here, SP > CP
Profit = ₹72 – ₹60 = ₹12

$$\text{Profit} = \frac{\text{Profit}}{\text{CP}} \times 100 = \left(\frac{12}{60} \times 100\right)\%$$

$$= \left(\frac{1 \times 100}{5}\right)\% = 20\,\%$$

(b) Here, SP > CP
Profit = ₹1460 – ₹1350 = ₹110

$$\text{Profit} = \frac{\text{Profit}}{\text{CP}} \times 100 = \left(\frac{110}{1350} \times 100\right)\%$$

$$= \left(\frac{11 \times 100}{135}\right)$$

$$= \left(\frac{11 \times 20}{27}\right)\% = \left(\frac{220}{27}\right)\% = 8\frac{4}{27}\%$$

(c) Here, CP > SP
Loss = CP – SP = ₹95 – ₹75 = ₹20

$$\text{Loss}\,\% = \left(\frac{\text{Loss}}{\text{CP}} \times 100\right)\% = \left(\frac{20}{95} \times 100\right)\%$$

$$= \left(\frac{4 \times 100}{19}\right)\% = \left(\frac{400}{19}\right)\% = 21\frac{1}{19}\%$$

(d) Here, SP > CP
Profit = SP – CP = ₹300 – ₹215 = ₹85

$$\text{Profit}\,\% = \frac{\text{Profit}}{\text{CP}} \times 100 = \left(\frac{85}{215} \times 100\right)\%$$

$$= \left(\frac{17 \times 100}{43}\right)\% = \left(\frac{1700}{43}\right)\%$$

$$= 39\frac{23}{43}\%$$

(e) Here, CP > SP
Loss = CP – SP = ₹909 – ₹808 = ₹101

$$\text{Loss}\,\% = \left(\frac{\text{Loss}}{\text{CP}} \times 100\right)\% = \left(\frac{101}{909} \times 100\right)\%$$

$$= \left(\frac{100}{9}\right)\% = 11\frac{1}{9}\%$$

Sol.2. CP = ₹ 18 and SP = ₹ 21
Profit = ₹ 21 – ₹ 18 = ₹ 3

Sol.3. CP = ₹ 5960 + ₹ 250 = ₹ 6210
SP = ₹ 7600
Here, SP > CP

$$\text{Profit \%} = \left(\frac{\text{Profit}}{\text{CP}} \times 100\right)\% = \left(\frac{1390}{6210} \times 100\right)\%$$

$$= 22\frac{238}{621}\%$$

Sol.4. (a) CP of 12 oranges = ₹ 21
SP of 12 oranges = ₹12 × 1.90 = ₹ 22.80
Here, SP > CP
Profit = ₹ 22.80 – ₹ 21 = ₹ 1.80

$$\text{Profit \%} = \left(\frac{1.80}{21} \times 100\right)\% = \frac{180}{21}\% = \frac{60}{7}\%$$

$$= 8\frac{4}{7}\%$$

Sol.5. CP = ₹ 625 and SP = ₹ 600
Here, SP < CP
Loss = CP – SP = ₹ 625 – ₹ 600 = ₹ 25

$$\text{Loss \%} = \frac{\text{Loss}}{\text{CP}} \times 100 = \left(\frac{25}{625} \times 100\right)\%$$

$$= \left(\frac{100}{25}\right)\% = 4\%$$

Sol.6. (b) Profit = ₹ 660 – ₹ 600 = ₹ 60

$$\text{Profit \%} = \left(\frac{60}{600} \times 100\right)\% = \left(\frac{60}{6}\right)\% = 10\%$$

(c) Loss = ₹1500 – ₹ 1200 = ₹ 300

$$\text{Loss \%} = \left(\frac{300}{1500} \times 100\right)\% = 20\%$$

(d) Profit = ₹ 2750 – ₹ 2500 = ₹ 250

$$\text{Profit \%} = \left(\frac{250}{2500} \times 100\right)\% = 10\%$$

(e) Loss = ₹ 3000 – ₹ 2700 = ₹ 300

$$\text{Loss \%} = \left(\frac{300}{3000} \times 100\right)\% = 10\%$$

Maths Skills

Sol.1. (a)
₹ 12763.30
₹ 13243.30
+ ₹ 947.00
₹ 26953.60

(b)
₹ 35916.00
– ₹ 26953.60
₹ 8962.40

Now, the merchant has ₹ 8962.40.

Sol.2. Balance = ₹ 20974.80 – ₹ 10544.40
= ₹ 10430.40
Each child gets = ₹ 10430.40 ÷ 2
= ₹ 5215.20

Sol.3. Cost of 1 cycle = ₹ 1075.50
Cost of 52 cycles = ₹ 1075.50 × 52 = ₹ 55926

Sol.4.

Vashudeva Milk Dairy
Kota (Rajasthan)
Bill No.: 4428 **Date : 29.01.20**
Name : Hemant Kota

S.No.	Name of items	Quantity	Rate	Amount
1.	Milk	8 litres	₹ 40.25	₹ 322.00
2.	Curd	3 litres	₹ 60.00	₹ 180.00
3.	Ghee	2 kgs	₹ 450	₹ 900.00
4.	Butter milk	5 litres	₹ 20.75	₹ 103.75
Fifteen hundred five rupees seventy five paise only			Total	₹ 1505.75

1. Errors and Omissions Excepted
2. Goods once sold will not be taken back or exchanged Signature

Sol.5.

Bill / Cash Memo
Mamta Geeral Store
Bill No.: 568 **Date : 29.01.20**
Name : Mena Karavli

S.No.	Name of items	Quantity	Rate	Amount
1.	Candle	3 Pkts	₹ 20.25	₹ 60.75
2.	Soap	5 Pkts	₹ 40.15	₹ 200.75
3.	Sugar	4 kgs	₹ 33.00	₹ 132.00
4.	Gram flour	2 litres	₹ 55.50	₹ 111.00
Fifteen hundred four rupees and thirty-five paise only			Total	₹ 504.50

1. Errors and Omissions Excepted
2. Goods once sold will not be taken back or exchanged Signature

Sol.6. CP = ₹ 22300 and loss = ₹ 3500
Loss = CP – SP
SP = CP – Loss = ₹ 22300 – ₹ 3500
= ₹ 18800

Sol.7. SP = ₹ 10525 and profit = ₹ 925
Porfit = SP – CP
CP = SP – Profit
CP = ₹ 10525 – ₹ 925 = ₹ 9600

Sol.8. CP = ₹ 2400 and SP = ₹ 3000
Profit = ₹ 3000 – ₹ 2400 = ₹ 600

$$\text{Profit \%} = \left(\frac{600}{2400}\times 100\right)\% = \left(\frac{100}{4}\right)\% = 25\%$$

Sol.9. CP = ₹ 1500 and SP = ₹ 1200
Loss = ₹ 1500 – ₹ 1200 = ₹ 300

$$\text{Loss \%} = \left(\frac{300}{1500}\times 100\right)\% = \left(\frac{100}{5}\right)\% = 20\%$$

HOTS

Let the no. of ₹ 1 coin be x and the no. of 50p coins be y.

Now, $x + y = 55$ ____(1)

and $x + \frac{y}{2} = 40$

$2x + y = 80$ ____(2)

Subtracting (1) from (2), we get

$$\begin{array}{r} 2x + y = 80 \\ x + y = 55 \\ \hline - \quad - \\ \hline x \quad = 25 \end{array}$$

Putting $x = 25$ in equation (1), we get

$25 + y = 55$

$y = 55 - 25 = 30$

Thus, no. of ₹ 1 coins = 25 and no. of 50 p coins = 30

Maths Olypiad

Tick (✓) the correct answer .

Sol.1.
$$\begin{array}{r} ₹\,648.20 \\ -\ ₹\,246.80 \\ \hline ₹\,401.40 \end{array}$$

∴ (b)

Sol.2. (a) cost price

Sol.3. (a) higher than

Sol.4. SP = ₹ 6570 and profit = ₹ 1020
CP = SP – profit = ₹ 6570 = ₹ 1020 = ₹ 5550
∴ (a)

Sol.5. Profit = ₹ 872 – ₹ 800 = ₹ 72

$$\text{Profit \%} = \left(\frac{72}{800}\times 100\right)\% = 9\%$$

∴ (d)

Sol.6. Loss = ₹ 1200 – ₹ 1080 = ₹ 120

$$\text{Loss \%} = \left(\frac{120}{1200}\times 100\right)\% = 10\%$$

∴ (a)

Chapter-13 Measurement

Test Prep 13.1

Sol.1. (a) 1 km = 10 hm
7 km = 7 × 10 hm = 70 hm
(b) 1 km = 10000 hm
10 km = 10 × 10000 dm = 1,00,000 dm
(c) 1 dam = 10000 mm
42 dam = 42 × 10000 mm = 420000 mm
(d) 1 dam = 10 m
35 dam = 35 × 10 m = 350
(e) 1 dm = 100 mm
58 dm = 58 × 100 mm = 5800 mm
(f) 1 m = 100 cm
63 = 63 × 100 cm = 6300 cm

Sol.2. (a) $1\text{cm} = \frac{1}{100}$ m

$18\text{ cm} = \frac{18}{100} = 0.18\text{ m}$

(b) $1\text{cm} = \frac{1}{10000}$ km

$6830\text{ cm} = \frac{6830}{100000} = 0.0683\text{ km}$

(c) $1\text{mm} = \frac{1}{10000}$ dam

$8000\text{ mm} = \frac{8000}{10000}\text{ dam} = 0.8\text{ dam}$

(d) 1km = 1000 m = 10 dam

$1\text{ dam} = \frac{1}{100}$ km

$\therefore 927\text{ dam:} = \frac{927}{100} = 9.27\text{ km.}$

(e) 3900 cm to dam : 1 cm = $\frac{1}{100}$ dam

$\therefore \frac{3900}{1000} = 3.90\text{ dam}$

(f) 1 cm = 10 mm

$\therefore \frac{75}{10} = 7.5\text{ mm.}$

Sol.3. (a) 1 kg = 1000 g
53 kg = 53 × 1000 g
= 53000 g

(b) 1 dag = 100 dg
17 dag = 17 × 100 dg
= 1700 dg

(c) 1 g = 1000 mg
34 g = 34 × 1000 mg
= 34000 mg

(d) 1 dg = 100 mg
71 dg = 71 × 100 mg
= 7100 mg

(e) $1\text{ dag} = 10\text{ g}$

$86\text{ dag} = 86 \times 10\text{ g}$

$= 860\text{ g}$

(f) $1\text{ g} = 1000\text{ mg}$

$51\text{ g} = 51 \times 1000\text{ mg}$

$= 51000\text{ mg}$

Sol.4. (a) $1\text{ dg} = \frac{1}{10}\text{ g}$

$650\text{ dg} = \frac{650}{10}\text{ g}$

$= 65\text{ g}$

(b) $1\text{ g} = \frac{1}{1000}\text{ Kg}$

$740\text{ g} = \frac{740}{1000}\text{ g}$

$= 0.74\text{ kg}$

(c) $1\text{ dg} = \frac{1}{1000}\text{ hg}$

$9338\text{ dg} = \frac{9338}{1000}\text{ hg}$

$= 9.338\text{ hg}$

(d) $1\text{ cg} = \frac{1}{1000}\text{ dag}$

$5213\text{ cg} = \frac{5213}{1000}\text{ dag}$

$= 5.213\text{ dag}$

(e) $1\text{ dg} = \frac{1}{10000}\text{ Kg}$

$1205\text{ dg} = \frac{1205}{10000}\text{ Kg}$

$= 0.1205\text{ Kg}$

(f) $1\text{ mg} = \frac{1}{10}\text{ cg}$

$18\text{ mg} = \frac{18}{10}\text{ cg}$

$= 1.8\text{ cg}$

Sol.5. (a) $1\text{ cL} = \frac{1}{1000}\text{ daL}$

$9360\text{ cL} = \frac{9360}{1000}\text{ daL}$

$= 9.36\text{ daL}$

(b) $1\text{ L} = \frac{1}{1000}\text{ kL}$

$8000\text{ L} = \frac{8000}{1000}\text{ kL}$

$= 8\text{ KL}$

(c) $1\text{ cL} = \frac{1}{100}\text{ L}$

$64\text{ cL} = \frac{64}{100}\text{ L}$

$= 0.64\text{ L}$

(d) $1\text{ cL} = \frac{1}{10}\text{ dL}$

$50\text{ cL} = \frac{50}{10}\text{ dL}$

$= 5\text{ dL}$

(e) $1\text{ daL} = \frac{1}{100}\text{ kL}$

$95\text{ daL} = \frac{95}{100}\text{ kL}$

$= 0.95\text{ KL}$

(f) $1\text{ dL} = 100\text{ mL}$

$3000\text{ dL} = 3000 \times 100\text{ mL}$

$= 300000\text{ mL}$

Test Prep. 13.2

Sol.1. (a)

Kg	g
76	450
+ 8	300
84	750

$= 84\text{ Kg } 750\text{ g}$

(b)

Kg	g
6	900
+ 65	050
71	950

$= 71\text{ Kg } 950\text{ g}$

(c)

Kg	g
50	600
45	750
+ 6	300
102	650

$= 102\text{ Kg } 650\text{ g}$

(d)

Kg	g
250	850
125	150
+ 35	700
411	700

$= 411\text{ Kg } 700\text{ g}$

Sol.2. (a)

Kg	g
75	500
− 55	100
20	400

$= 20\text{ Kg } 400\text{ g}$

(b)

Kg	g
640	400
+ 275	700
364	700

$= 364\text{ Kg } 700\text{ g}$

(c)

Kg	g
15	650
– 10	500
5	150

= 5 Kg 150 g

(d)

Kg	g
84	750
+ 64	800
19	950

= 19 Kg 950 g

Sol.3. (a)

m	cm
20	35
– 35	32
50	67

= 50 m 67 gcm

(b)

m	cm
16	35
+ 25	35
41	70

= 41 m 70 cm

(c)

Km	m
4	600
– 5	500
10	100

= 10 Km 100 m

(d)

Km	m
7	800
+ 3	400
11	200

= 11 Km 200 m

Sol.4. (a)

m	cm
15	25
– 10	85
4	40

= 4 m 40 cm

(b)

m	cm
28	30
– 25	55
2	75

= 2 m 75 cm

(c)

m	cm
50	300
– 20	600
29	700

= 29 m 700 cm

(d)

Km	m
75	300
– 38	750
36	550

= 36 Km 550 m

Sol. 5. (a)

L	mL
3	250
+ 6	150
10	400

= 10 L 400 mL

(b)

L	mL
7	850
+ 9	300
17	150

= 17 L 150 mL

(c)

L	mL
20	500
+ 35	600
56	100

= 56 L 100 mL

(d)

L	mL
45	600
+ 20	500
66	100

= 66 L 100 mL

Sol. 6. (a)

L	mL
5	250
– 2	150
3	100

= 3 L 100 mL

(b)

L	mL
9	200
– 3	150
6	050

= 6 L 50 mL

(c)

L	mL
84	600
– 34	400
50	200

= 50 L 200 mL

(d)

L	mL
55	750
– 32	800
22	950

= 22 L 950 mL

Sol. 7.

Kg	g
75	750
+ 25	500
101	250

Total weight of grapes = 101 kg 250 g

Sol. 8.

45.85 kg
– 20.96 kg
24.89 kg

Mohan is heavier than Naveen by 24.89 kg.

Sol. 9.

m	cm
200	50
+ 200	50
401	00

Mr. Naveen walked 401m.

Sol. 10.

m	cm
27	40
+ 20	30
7	10

7 m 10 cm rope is left.

Sol. 11.

L	mL
15	500
20	100
+ 50	200
85	800

Total 85 L 800 mL petrol is solid.

Sol. 12.

L	mL
60	000
– 22	500
37	500

37 L 500 mL oil is left.

Test Prep. 13.3

Sol.1. (a)

m	cm
12	23
× 14	
48	92
122	30
171	22

= 171 m 22 cm
= 171.22 m

(b)

L	mL
5	237
× 32	
10	474
157	110
167	584

= 167 L 584 mL
= 167.584 L

(c)

kg	g
38	006
×	60
00	000
2280	360
2280	360

= 2280 kg 360 g

= 2280.360 kg

(d)

km	m
63	405
×	16
380	430
634	050
1014	480

= 1014 km 480 m

= 1014.480 km

Sol.2. (a) 100 Kg 50 g = 100.050 Kg

$$20\overline{)100.0500}\ 5.0025$$

100.050 Kg ÷ 20 = 5.0025 Kg

(b) $3\overline{)2109}\ 703$

2109 g ÷ 3 = 703 g

(c) 9 cg 5 mg = 95 mg

$$5\overline{)95}\ 19$$

95 mg ÷ 5 = 19 mg

(d) 47 L 20 mL = 47.020 L

$$10\overline{)47.020}\ 4.702$$

47.020 L ÷ 10 = 4.702 L

Sol.3.

	450.56
×	143
	135168
	1802240
	4505600
	64430.08

Milk supplied to 1 booth = 450.56 L

Milk supplied to 143 booths = 450.56 × 143

= 64430.08 L

Total 64430.08 L milk is supplied to all booths.

Sol.4. Distance covered in day = 486.94 km

Distance covered in 23 day = 486.94 × 23 km

= 11199.62 km

	486.94
×	23
	146082
	9732880
	11199.62

Sol.5. Weight of 1 bag = 46 kg 800 g = 46.800 kg

Weight of 18 bags = 46.800 × 18 kg

= 842.400 kg

Sol.6. Water in one jar = 150 mL

Water in 4 jars = 150 × 4 mL = 600 mL

Sol.7. Petrol in one container = 3 L 500 mL

Petrol in 18 containers = 3 L 500 mL × 8

= 28 L

Sol.8. Total water = 24 L

Water in each bucket = (24 ÷ 4) L = 6 L

Sol.9. Total kerosene = 10 L 500 mL

Kerosene in each bottle = 10 L 500 mL ÷ 5

= 2 L 100 mL

Test Prep 13.4

Sol.1. (a) clinical (b) 98.6 (c) 180
(d) 36.4 °c (e) 212

Sol.2. (a) 50 °F – 32 °F = 18 °F

$$18^\circ \times \frac{5}{9}\,^\circ C = 2 \times 5\,^\circ C = 10\,^\circ C$$

(b) 77 °F – 32 °F = 45 °F

$$45^\circ \times \frac{5}{9}\,^\circ C = 5 \times 5\,^\circ C = 25\,^\circ C$$

(c) 95 °F – 32 °F = 63 °F

$$63^\circ \times \frac{5}{9}\,^\circ C = 7 \times 5\,^\circ C = 35\,^\circ C$$

(d) $104\,^{o}F - 32\,^{o}F = 72\,^{o}F$

$72^{o} \times \frac{5}{9}\,^{o}C = 8 \times 5\,^{o}C = 40\,^{o}C$

(e) $131\,^{o}F - 32\,^{o}F = 99\,^{o}F$

$99^{o} \times \frac{5}{9}\,^{o}C = 11 \times 5\,^{o}C = 55\,^{o}C$

(f) $179.6\,^{o}F - 32\,^{o}F = 147.6\,^{o}F$

$147.6^{o} \times \frac{5}{9}\,^{o}C = 82\,^{o}C$

(g) $199.4\,^{o}F - 32\,^{o}F = 167.4\,^{o}F$

$167.4^{o} \times \frac{5}{9}\,^{o}C = 93\,^{o}C$

(h) $212\,^{o}F - 32\,^{o}F = 180\,^{o}F$

$180^{o} \times \frac{5}{9}\,^{o}C = 100\,^{o}C$

Sol.3. (a) $20^{o} \times \frac{9}{5}\,^{o}C = 4 \times 9\,^{o}C = 36\,^{o}C$

$(36 + 32)\,^{o}F = 68\,^{o}F$

(b) $30^{o} \times \frac{9}{5}\,^{o}C = 6 \times 9\,^{o}C = 54\,^{o}C$

$(54 + 32)\,^{o}F = 86\,^{o}F$

(c) $45^{o} \times \frac{9}{5}\,^{o}C = 9 \times 9\,^{o}C = 81\,^{o}C$

$(81 + 32)\,^{o}F = 113\,^{o}F$

(d) $72^{o} \times \frac{9}{5}\,^{o}C = \frac{648}{5}\,^{o}C = 129.6\,^{o}C$

$(129.6 + 32)\,^{o}F = 161.6\,^{o}F$

(e) $75^{o} \times \frac{9}{5}\,^{o}C = 15 \times 9\,^{o}C = 135\,^{o}C$

$(135 + 32)\,^{o}F = 167^{o}F$

(f) $95^{o} \times \frac{9}{5}\,^{o}C = 19 \times 9\,^{o}C = 171\,^{o}C$

$(171 + 32)\,^{o}F = 203\,^{o}F$

(g) $96^{o} \times \frac{9}{5}\,^{o}C = \frac{864}{5}\,^{o}C = 172.8\,^{o}C$

$(172.8 + 32)\,^{o}F = 204.8\,^{o}F$

(h) $100^{o} \times \frac{9}{5}\,^{o}C = (20 \times 9)\,^{o}C = 180\,^{o}C$

$(180 + 32)\,^{o}F = 212\,^{o}F$

Sol.4. Celsius and Fahrenheit

Maths Skills

Sol.1. (a) $1\text{ m} = 100\text{ cm}$

$78\text{ m} = 78 \times 100\text{ cm} = 7800\text{ cm}$

(b) 23 hm 8 dm 7 mm

$= 23 \times 10000\text{ cm} + 8 \times 10\text{ cm} + \frac{7}{10}\text{ cm}$

$= 230000\text{ cm} + 80\text{ cm} + 0.7\text{ cm}$

$= 230080.7\text{ cm}$

(c) $88.719\text{ hm} = 88.719 \times 10000\text{ cm}$

$= 887190\text{ cm}$

Sol.2. (a) $9\text{ g} = \frac{9}{1000}\text{ kg} = 0.009\text{ kg}$

(b) $3\text{ kg }75\text{ g} = 3\text{ kg} + \frac{75}{1000}\text{ kg}$

$= 3\text{ kg} + 0.075\text{ kg} = 3.075\text{ kg}$

(c) 2 kg 5 hg 4 dag 3 g

$= 2 \times 1000\text{ g} + 5 \times 100\text{ g} + 4 \times 10\text{ g} + 3\text{ g}$

$= 2000\text{ g} + 500\text{ g} + 40\text{ g} + 3\text{g}$

$= 2543\text{ g}$

Sol.3. (a) $49\text{ mL} = \frac{49}{1000}\text{ L} = 0.049\text{ L}$

(b) $91\text{ L }85\text{ mL} = 91 \times 1000\text{ mL} + 85\text{ mL}$

$= (91000 + 85)\text{ mL}$

$= 8025\text{ mL}$

Sol.4. (a) $35^{o}C = 35 \times \frac{9}{5}\,^{o}C = 7 \times 9\,^{o}C = 63\,^{o}C$

$(63 + 32)\,^{o}F = 95\,^{o}F$

(b) $81^{o}C = 81 \times \frac{9}{5}\,^{o}C = \frac{729}{5}\,^{o}C = 145.8\,^{o}C$

$(145.8 + 32)\,^{o}F = 177.8\,^{o}F$

(c) $130^{o}C = 130 \times \frac{9}{5}\,^{o}C = 26 \times 9\,^{o}C = 234\,^{o}C$

$(234 + 32)\,^{o}F = 266\,^{o}F$

Sol.5. (a) $(113 - 32)\,^{o}F = 18\,^{o}F$

$81^{o} \times \frac{5}{9}\,^{o}C = 9 \times 5\,^{o}C = 45\,^{o}C$

(b) $(167 - 32)\,^{o}F = 135\,^{o}F$

$135^{o} \times \frac{5}{9}\,^{o}C = 15 \times 5\,^{o}C = 75\,^{o}C$

(c) $(140 - 32)\,^{o}F = 108\,^{o}F$

$108^{o} \times \frac{5}{9}\,^{o}C = 12 \times 5\,^{o}C = 60\,^{o}C$

Sol.6. Temperature increased from 15 April to 30 April

$= 1.5\,^{o}C \times 15 = 22.5\,^{o}C$

Temperature on 30 April $= 22.5\,^{o}C + 22.5\,^{o}C$

$= 45\,^{o}C$

HOTS

Sol.1. Temperature for ice = 0 ºC
So, the temperature should reduce by 180ºC to become ice.

Sol.2. Yes, at – 40ºC and – 40 ºF[1]

Maths Olympiad

Tick (✓) the correct answer :

Sol.1. (b) $250 \text{ gm} = \frac{250}{1000} \text{ kg} = \frac{1}{4} \text{ kg}$

Sol.2. (a) $1\frac{3}{4} \text{ kg} = \frac{7}{4} \times 1000 \text{ g} = 7 \times 250 \text{ g} = 1750 \text{ g}$

Sol.3. (c) $(158 - 32)\,^{\circ}\text{F} = 126\,^{\circ}\text{F}$

$126 \times \frac{5}{9}\,^{\circ}\text{C} = 14 \times 5\,^{\circ}\text{C} = 70\,^{\circ}\text{C}$

Sol.4. (c) 212 ºF

Sol.5. (c) thermometer

Sol.6. (b) multiply

Chapter-14 Time

Test Prep 14.1

Sol.1. (a) 5 : 40 a.m. (b) 1 : 20 a.m.
(c) 0 : 20 a.m. (d) 12 : 09 p.m.
(e) 12 : 57 p.m.
(f) 1536 hours = (1536 – 1200) p.m. = 0336 p.m.
= 03 : 36 p.m.
(g) 1625 hours = (1625 – 1200) p.m. = 0425 p.m.
= 04 : 25 p.m.
(h) 12 mid night
(i) 2345 hours = (2345 – 1200) pm = 1145 p.m.
= 11 : 45 p.m.
(j) 2138 hours = (2138 – 1200) pm = 0938 p.m.
= 09 : 38 p.m.
(k) 1458 hours = (1458 – 1200) pm = 0258 p.m.
= 02 : 58 p.m.
(l) 2000 hours = (2000 – 1200) p.m. = 0800 p.m.
= 08 : 00 p.m.

Sol.2. (a) 03 : 05 a.m. = 0305 hours
(b) 11 : 35 a.m. = 1135 hours
(c) 00 : 06 a.m. = 0006 hours
(d) 00 : 36 a.m. = 0036 hours
(e) 12 : 15 a.m. = 0015 hours
(f) 02 : 17 p.m. = (1200 + 0217) hours
= 1417 hours
(g) 11 : 00 p.m. = (1200 + 1100) hours
= 2300 hours
(h) 00 : 57 a.m. = 0057 hours
(i) 12 : 56 a.m. = 0056 hours
(j) 01 : 40 a.m. = 0140 hours
(k) 03 : 30 a.m. = 0330 hours
(l) 09 : 40 p.m. = (1200 + 0940) hours
= 2140 hours

Sol.3. (a) 1620 hours or 04 : 20 p.m.
(b) 0048 hours or 00 : 48 a.m.
(c) 1540 hours or 03 : 40 p.m.
(d) 0730 hours or 07 : 30 a.m.

Test Prep 14.2

Sol.1. 4 : 30 p.m. = 1630 hours
9 : 15 a.m. = – 0915 hours
Difference = 0715 hours
The picnic lasts for 7 hours 15 minutes.

Sol.2. 11 : 15 a.m. = 1075 hours
07 : 45 a.m. = – 0745 hours
Difference = 0330 hours
Remember that here carry over is 60 minutes.
The bus takes 3 hours 30 minutes.

Sol.3. 2 hour 8 minutes = (2×60+8) min = 128 min
1 hour 12 minutes = 60 + 12 min = – 72 min
Difference = 56 min
Suresh takes 56 minutes more.

Sol.4.

hours	minutes
8	47
– 8	25
0	22

Ajay runs 22 minutes more.

Sol.5.

hours	minutes
5	30
+ 4	45
9	75

= 9 hours 75 minutes
= 9 hours + (60 min + 15 min)
= 9 hours + (1 hour + 15 min)
= 10 hours + 15 min
= 10 hours 15 min

Sol.6.

hours	minutes
2	45
+ 3	16
5	61

= 5 hours 61 minutes
= 5 hours + (60 min + 1 min)
= 5 hours + (1 hour + 1 min)
= 6 hours 1 min

Sol.7. August = (31 – 7) = 24 days
September = 30 days
October = 31 days
November = 30 days
December = 31 days
January = + 3 days
Total days = 149 days
Years = 2005 – 2006, 2006 – 2007, 2007 – 2008, 2008 – 2009
Total time = 4 years 149 days

Sol.8. December = (31 – 4) = 27 days
January = 31 days
February = + 12 days
Total days = 70 days
The school was closed for 70 days.

Sol.9. Years months

49	14
~~50~~	~~02~~
– 22	07
27	07

Kanav taught for 27 years 7 months.

Sol.10. Years months Days

	14	
2008	~~02~~	33
~~2009~~	~~03~~	~~02~~
– 2004	04	07
4	10	26

Soha is younger by 4 years 10 months 26 days.

Test Prep 14.3

Sol.1. (a) $\text{Speed} = \frac{\text{Distance}}{\text{Time}} = \frac{300\text{ km}}{5\text{ hours}}$
$= 60$ km/h

(b) $\text{Speed} = \frac{12\text{ km}}{3\text{ hours}} = 4$ km /h

(c) $\text{Speed} = \frac{54\text{ km}}{3\text{ hours}} = 18$ km/h

(d) $\text{Speed} = \frac{800\text{ km}}{16\text{ hours}} = 50$ km/h

Sol.2. (a) $54\text{ km/h} = \frac{54\times1000\text{ m}}{60\times60\text{ s}} = \frac{54\times10}{36}$ m/s
$= \frac{6\times10}{4}\text{ m/s} = 3\times5\text{ m/s} = 15$ m/s

(b) $45\text{km/h} = \frac{45\times1000\text{ m}}{60\times60\text{ s}} = \frac{45\times10}{36}$ m/s
$= \frac{5\times10}{4} = 12.5$ m/s

(c) $4.5\text{ km/h} = \frac{4.5\times1000\text{ m}}{60\times60\text{ s}} = \frac{45\times1000\text{ m}}{60\times60\times10\text{ s}}$
$= \frac{45}{36}\text{ m/s} = 1.25$ m/s

(d) $25\text{ m/s} = \frac{25\times\frac{1}{1000}}{\frac{1}{60}\times\frac{1}{60}} = \frac{25\times60\times60}{1000}$ km/h
$= \frac{26\times6\times6}{10}\text{ km/h} = 5\times3\times6\text{ km/h}$
$= 90$ km/h

(e) $635\text{ m/s} = \frac{635\times60\times60}{1000} = 127\times3\times6\text{ km/h}$
$= 2286$ km/h

(f) $10\text{ m/s} = \frac{10\times60\times60}{1000}\text{ km/h} = 36\text{ km/h}$

Sol.3. $\text{Speed} = \frac{480\text{ km}}{16\text{ hours}} = 30$ km/h

Sol.4. 1 hour 30 minutes = 60 × 60 sec + 30 × 60 sec
= (3600+1800) sec = 5400 sec

$\text{Speed} = \frac{15}{\frac{5400}{3600}}$ km/h

$= \frac{15\times3600}{5400}\text{ km/h} = \frac{15\times2}{3}\text{ km/h} = 10\text{ km/h}$

Sol.5. $\text{Speed} = \frac{950\text{ m}}{5\text{ min}} = \frac{\frac{950}{1000}}{\frac{5}{60}}$ km/h

$= \frac{950\times60}{5\times1000}\text{ km/h} = 11.4$ km/h

Sol.6. Distance = 500 m = $\frac{500}{1000}$ km = $\frac{1}{2}$ km

Time = 100 sec = $\frac{100}{60\times60}$ h = $\frac{1}{36}$ h

Speed = $\frac{\text{Distance}}{\text{Time}} = \frac{\frac{1}{2}}{\frac{1}{36}}$ km/h

= $\frac{36}{2}$ km/h = 18 km/h

Sol.7. Time = 2205 hours – 1915 hours = 2 h 50 min

= $\left(2+\frac{50}{60}\right) = 2\frac{5}{6} = \frac{17}{6}$ h

$$\begin{array}{cc} 21 & 65 \\ \cancel{22} & \cancel{05} \\ -\ 19 & 15 \\ \hline 02 & 50 \end{array}$$

Speed = $\frac{\text{Distance}}{\text{Time}} = \frac{153}{\frac{17}{6}}$ km/h = $\frac{153\times6}{17}$ km/h

= 54 km/h

Sol.8. Speed of Raju = $\frac{11}{10}$ km/min = 1.1 km /min

Speed of Babbu = $\frac{24}{20}$ km/min = 1.2 km/min

Babbu travelled faster.

Test Prep 14.4

Sol.1. (a) Distance = speed × time

= 90 × 8 km = 720 km

(b) Distance = speed × time = 35 × 7 km

= 245 m

Sol.2. (a) Time = $\frac{\text{Distance}}{\text{Time}} = \frac{7150}{780}$ h = $9\frac{1}{6}$ h

(b) Distance = 8 m

Speed = $8\frac{2}{5}$ m/s = $\frac{42}{5}$ m/s

Time = $\frac{8\text{ m}\times5}{42\text{ m/s}} = \frac{20}{21}$ sec

(c) Time = $\frac{27}{45}$ h = $\frac{3}{5}$ h

Sol.3. Time = 7 hours 30 minutes

= $\left(7+\frac{1}{2}\right)$ hours = $\frac{15}{2}$ hours

Distance = Speed × Time = $675\times\frac{15}{2}$ km

= 5062.50 km

Sol.4. Time = $\frac{\text{Distance}}{\text{Speed}} = \frac{382.5}{85} = 4\frac{1}{2}$ hours

Sol.5. Time = $\frac{675}{25}$ h = 27 hours

Maths Skills

Sol.1. (a) 1200 + 0722 = 1922 hours

(b) 1200 + 0120 = 1320 hours

(c) 0048 hours = 12 : 48 a.m.

(d) 2318 hours = (2318 – 1200) a.m. = 11:18 a.m.

(e) 8: 05 a.m. = 0805 hours

(f) 12:37 p.m. = 1237 hours

(g) 2125 hours = (2125 – 1200) = 0925 = 9:25 p.m.

(h) 1919 hours = (1919 – 1200)

= 0719 p.m. = 07 : 19 p.m.

Sol.2. 18 days after 25th December = 11 January

Sol.3. 5 : 20 p.m. = 1720 hours

Time = (1720 + 0150) hours

= 1910 hours

= 7: 10 p.m.

$$\begin{array}{r} 1720 \\ +\ 0150 \\ \hline 1870 \\ \underline{1910} \end{array}$$

Sol.4. Duration from 9:30 a.m. to 9:30 p.m. = 12 hours

Duration from 9:30 p.m. to 6:45 a.m. = 2 hours

30 minutes + 6 hours 45 minutes

= 8 hours 75 minutes

= 9 hours 15 minutes

Total time duration = 12 hours + 9 hours 15 min

= 21 hours 15 minutes

Sol.5. Speed = $\frac{600}{4}$ km/h = 150 km/h

Sol.6. Distance = 24000 m = $\frac{24000}{1000}$ km = 24 km

Time = 300 seconds = $\frac{300}{60\times60}$ h = $\frac{1}{12}$ h

Speed = $\frac{24}{\frac{1}{12}}$ km/h = 24 × 12 km/h = 288 km/h

Sol.7. Speed = 80 km/ph
time = 6 hrs.
∴ distance = 80×6 = 480 km.

Sol.8. Time = 11:30 am to 00:50 am = 13 hour 20 min

$= \left(13+\frac{1}{3}\right)\text{hours} = \frac{40}{3}$ hours

Distance $= 75 \times \frac{40}{3}$ km = 1000 km

Sol.9. 3 h 20 min $= \left(3+\frac{1}{3}\right)\text{h} = \frac{10}{3}$ h

Speed $= \frac{900}{\frac{10}{3}} = \frac{900\times 3}{10} = 270$ km/h

$= \frac{270\times 1000}{60\times 60}$ m/s $= \frac{270\times 5}{6\times 3} = \frac{1350}{18}$ km/h

Distance covered in 40s = 75 × 40 m = 300m
= 3 km

Sol.10. Time $= \frac{382.5}{85}$ km = 4.5 hours

HOTS

Sol.1. Speed of car $= \frac{156}{4}$ km/h = 39 km/h

Speed of bus $= \frac{140}{3}$ km/h $= 46\frac{2}{3}$ km/h

Speed of bus is greater.

Sol.2. Speed = 54 km/h $= \frac{54\times 1000}{60\times 60}$ m/s

$= \frac{9\times 10}{6} = 3 \times 5$ m/s = 15 m/s

Bus travels 15 metre in 1 second.

Maths Olympiad

Tick (✓) the correct option.

Sol.1. (c) 5 : 35
: 35
5 : 70 = 6 : 10 p.m.

Sol.2. (c) 10: 25 p.m. to 12:00 mid night = 1 h 35 min
12 : 00 mid night to 6 : 10 am = + 6 h 10 min
Total time = 7 h 45 min

Sol.3. (c) 1200 + 0915 = 2115 hours

Sol.4. (d) 2 : 20 pm = 13 80
~~14 20~~
3 : 30 hours = − 03 30
10 50
= 10: 50 a.m.

Sol.5. (c) $s = \frac{d}{t} = \frac{500}{25} = 20$ m/s

Sol.6. (a) 50 m/s $= \frac{50\times 60\times 60}{1000}$ km/h = 180 km/h

Chapter-15 Mensuration

Test Prep 15.1

Sol.1. (a) Perimeter = Sum of sides
= (10 + 10 + 10) cm = 30 cm
(b) Perimeter = 4 × side = 4 × 5 cm = 20 cm
(c) Perimeter = 4 × side = 4 × 9 cm = 36 cm
(d) Perimeter = 2 (l + b)
= 2 × (21 + 13) cm = 2 × 34 cm
= 68 cm
(e) Perimeter = sum of sides
= (4 + 5 + 2 + 8 + 3) cm - 22 cm
(f) Perimeter = (1 + 4 + 2 + 5 + 6) cm = 18 cm
(g) Perimeter = (6 + 0.5 + 4 + 2 + 4 + 0.5 + 6 + 3)
= 26 cm
(h) Perimeter = (13 + 2 + 12 + 12 + 13 + 2) cm
= 54 cm
(i) Perimeter = 8 × 2 cm = 16 cm

Sol.2. (a) Perimeter = Sum of sides
= (6 + 7 + 5) cm = 18 cm
(b) Perimeter = (7.5 + 6.3 + 5.1) cm = 18.9 cm
(c) Perimeter = (4.9 + 5.2 + 8.1) cm = 18.2 cm
(d) Perimeter = (6 + 7.2 + 8.5) cm = 21.7 cm

Sol.3. (a) Perimeter of rectangle = 2 (l + b)
=2 (26 +19) cm = 2 × 45 cm = 90 cm
(b) Perimeter = 2 (37 + 28) m
= 2 × 65m = 130 m

Sol.4. (a) Perimeter of square = 4 × side
= 4× 60 cm = 240 cm
(b) Perimeter = 4 × 2.5 m = 10 m

Sol.5. Perimeter = (5.9 + 5.9 + 7.6) cm = 19.4 cm

Sol.6. Perimeter = 3 × side = 3 × 8.7 cm = 26.1 cm

Sol.7. Perimeter = sum of sides
18 cm = 3.9 cm + 5.8 cm + third side
Third side = (18 – 9.7) cm = 8.3 cm

Sol.8. Perimeter = 3 ×side
Side $= \frac{\text{Perimeter}}{3} = \frac{27.9}{3}$ cm = 9.3 cm

Sol.9. Perimeter = 2 (l + b)
120 = 2 (40 + b)
40 + b = 60
b = 60 – 40
Breadth = 20 cm

Sol.10. Perimeter = required length = perimeter of field
$= 2(l + b)$
$= 2(350 + 325)\text{ m} = 2 \times 675\text{ m}$
$= 1350\text{ m}$

Sol.11. required length $= 4 \times$ side
$= 4 \times 18\text{ m} = 72\text{ m}$

Sol.12. Length of wall = Perimeter of plot
$= 2(l + b) = 2(73 + 52)\text{ m}$
$= 2 \times 125\text{ m} = 250\text{ m}$
Cost of constructing the wall = ₹125×250
= ₹$31,250$

Sol.13. Perimeter of field $= 4 \times$ side $= 4 \times 97\text{ m} = 388\text{ m}$
Distance $= 4 \times 388\text{ m} = 1552\text{ m}$

Sol.14. Total length = Perimeter of field
$= 4 \times$ side
$$\text{Side} = \frac{\text{Total length}}{4} = \frac{308}{4}\text{ m} = 77\text{m}$$

Test Prep 15.2

Sol.1. (a) Area $= l \times b = 5.5 \times 1.5$ sq. cm $= 8.25$ sq. cm
(b) Area = side × side
$= 60 \times 60$ sq.cm $= 3600$ sq.cm
(c) Area $= \frac{1}{2} \times$ base × height
$= \frac{1}{2} \times 12 \times 8$ sq.cm $= 48$ sq.cm
(d) Area $= \frac{1}{2} \times$ base × height
$= \frac{1}{2} \times 12 \times 4$ sq. cm $= 24$ sq.cm

Sol.2. (a) Area $= l \times b = 6 \times 3$ sq.cm $= 18$ sq. cm
(b) Area $= 15.2 \times 8.1$ sq.m $= 123.12$ sq.m
(c) Area $= 183.6 \times 0.6$ sq.m $= 11.16$ sq.m
(d) Area $= 20 \times 0.5$ sq.m $= 10$ sq.cm

Sol.3. (a) Area = side × side $= 16 \times 16$ sq.cm $= 256$ sq.cm
(b) Area $= 12.5 \times 12.5$ sq.m $= 156.25$ sq.m
(c) Area $= 18.2 \times 18.2$ sq.cm $= 331.24$ sq. m
(d) Area $= 25.5 \times 25.5$ sq.m $= 650.25$m

Sol.4. (a) Side $= 25\text{ m } 25\text{ cm} = 25.25\text{ m}$
Area = side × side $= 25.25\text{m} \times 25.25\text{m}$
$= 637.5625$ sq.m.

Sol.5. (a) Area = length × breadth
$378 =$ length $\times 14$
$$\text{Length} = \frac{378}{14}\text{ cm} = 27\text{ cm}$$
(b) Area $= l \times b$
$900 =$ length $\times 25$
$$\text{Length} = \frac{900}{25} = 36\text{ m}$$

Sol.6. (a) Area = length × breadth
$$\text{Breadth} = \frac{\text{Area}}{\text{length}} = \frac{391}{23}\text{ m} = 17\text{ m}$$
(b) $$\text{Breadth} = \frac{117}{13}\text{ cm} = 9\text{ cm}$$

Sol.7. Area $= \frac{1}{2}$ base × height $= \frac{1}{2} \times 40 \times 24$ sq.cm
$= 480$ sq.cm

Sol.8. Area of field $= 75 \times 18$ sq.m $= 1350$ sq.m
Cost of ploughing the field = ₹350×2.50
= ₹3375

Sol.9. Size of block $= 25 \times 12$ sq.cm
Area of path $= 12.5\text{ m} \times 4.8\text{ m}$
$= 12.5 \times 100\text{ cm} \times 4.8 \times 100\text{ cm}$
$= 1250 \times 480$ sq.cm
$$\text{No. of blocks required} = \frac{1250 \times 480}{25 \times 12} = 2000$$

Sol.10. Area of one wall $= 6 \times 4.50$ sq.m $= 27$ sq.m
Cost of painting of one wall = ₹27×10 = ₹270
Cost of painting of 4 walls = ₹270×4 = ₹1080

Sol.11. Area of playground = length × breadth
$16000 = 160 \times$ breadth
$$\text{Breadth} = \frac{16000}{160} = 100\text{m}$$
Perimeter = 2 (length + breadth)]
$= 2(160 + 100)\text{ m} = 520\text{m}$

Sol.12. Area of field = side × side
$= 72 \times 72$ sq.m $= 5184$ sq.m
$$\text{Cost of laying grass} = ₹\,51845 \times \frac{40}{100}$$
= ₹2073.60

Sol.13. Area of square field = side × side
$= 15 \times 15$ sq.m
Area of rectangular pot = length × breadth
$= 5 \times 3\text{ sq.m} = 15\text{ sq.m}$
$$\text{No. of pots required} = \frac{15 \times 15}{15} = 15$$

Sol.14. Area of a plank of wood = l × b = 2 × 1.1 sq.m
= 2.2 sq.m
Area of 4 plank of wood = 4 × 2.2 sq.m
= 8.8 sq.m
Total Area of 4 planks of wood = 2 × 8.8 sq.m
Cost of painting = ₹ 4.50 × 17.60 = ₹ 79.20

Sol.15. Area of a carpet = 5 × 305 sq.m = 17.5 sq.m
Area of the floor = area of 25 carpets
= 25 × 17.5 sq.m
= 437.50 sq.m

Sol.16. (a) Area = 14 sq.m
(b) Area = 26 sq.m
(c) Area = 20 sq.m
(d) Area = 30 sq.m

Test Prep 15.3

Sol.1. (a) Volume = length × breadth × height
= 7 × 2 × 4 cu.cm = 56 cu.cm
(b) Volume = 5 × 5 × 9 cu.cm = 225 cu.cm
(c) Volume = 8× 8 ×8 cu.cm = 512 cu.cm

Sol.2. (a) Volume = 12 × 7 × 6 cu.cm = 504 cu.cm
(b) Volume = 5 ×2. 5 × 2 cu.cm = 25 cu.cm
(c) Volume = 12.5 × 7.8 ×4.5 cu.cm
= 438.75 cu.cm

Sol.3. (a) Volume of one brick = 21.6 × 9.6 × 6.4 cu.cm
= 1327.104 cu.cm
Volume of 7 bricks = 7 × 1327.104 cu.cm
= 9289.728 cu.cm

Sol.4. Volume of tank = 12.4 × 7.8 × 6 cu.cm
= 580.32 cu. cm
Water in the tank is 580.32 cu.m.

Sol.5. Air in the room = Volume of the room
= 4.6 × 3.5 × 3.5 cu.m
= 56.35 cu.m

Sol.6. (a) Volume of cube = side × side ×side
= 17 × 17 × 17 cu.cm
= 4913 cu.cm
(b) Volume = 10.5 × 10.5 × 10.5 cu.cm
= 1157.625 cu.cm
(c) Volume = $\frac{31}{4} \times \frac{31}{4} \times \frac{31}{4}$ cu.cm
= $\frac{29791}{64}$ cu.cm

Sol.7. Internal volume of cubical tank = 3.2×3.2×3.2 cu.m
= 32.768 cu.m

Sol.8. Volume of earth dug out = 5.2 × 5.2 × 5.2 cu.m
= 140.608 cu.m

Sol.9. Volume of a brick = 25 × 16 × 7.5 cu.cm
Volume of terrace = (5 ×100)×(3 ×100) × 80 cu.cm
No. of bricks required = $\frac{500 \times 300 \times 80}{25 \times 16 \times 7.5}$
= $\frac{500 \times 300 \times 80 \times 10}{25 \times 16 \times 75}$
= $\frac{20 \times 4 \times 5 \times 10}{1 \times 1 \times 1} = 4000$

Sol.10. Volume of wooden block = 24 × 18× 15 cu.cm
Volume of cubical block = 6 × 6 × 6 cu.cm
No. of blocks required = $\frac{24 \times 18 \times 15}{6 \times 6 \times 6}$
= 3 × 2 × 5 = 30

Maths Skills

Sol.1. Perimeter = 2 (l +b) = 2 (5+ 3) cm = 16 cm
Area = l × b = 5 ×3 sq.cm = 15 sq.cm
If we extend this rectangle by 1 cm in length
Then area will be 6 × 3 = 18 sq.cm and perimeter will be 2 (6 + 3) = 18 cm
In this case, perimeter and area are equal.

Sol.2. Area = l × b = 25 × 3 = 750 sq.m

Sol.3. Perimeter = 2 (l + b) = 2 (125 + 60) cm = 370 cm

Sol.4. side = $\frac{\text{Area}}{4} = \frac{260}{4} = 65$ m

Sol.5. Area of the mat = 8 × 7 sq.m = 56 sq.m

Sol.6. Volume of 1 notebook = 10× 6 × 1.5 cu.cm
= 90 cu.cm
Volume of 12 notebooks = 12 × 90 cu.cm
= 1080 cu.cm

Sol.7. Volume of cube = 12 × 12 × 12 cu .cm
= 1728 cu.cm

HOTS

Sol.1. Volume of milk = l × b × h
240 = 4 × 5 × h
height = $\frac{240}{20}$ cm = 12 cm

Sol.2. Volume = 3375 cu.cm
side × side × side = 3375
$(\text{side})^3 = 15 \times 15 \times 15$
$\therefore$ side = $\sqrt[3]{15 \times 15 \times 15}$
side = 15 cm

3	3375
3	1125
3	375
5	125
5	25
5	5
	1

Sol.3. 4 cm

Maths Olympiad

Tick (✓) the correct order.

Sol.1. Area = 2 × 2 sq. cm = 4 sq.cm

So, (a) is correct.

Sol.2. Length = $\frac{132}{12}$ m = 11m

So, (b) is correct.

Sol.3. Volume of cube = 7 ×7 ×7 cu.cm = 343 cu.cm

So, (c) is correct.

Sol.4. Here, l = (1 + 1 +1) cm = 3cm

b = 1 cm

h = 1 cm

Volume = l × b × h = 3× 1× 1 cu.cm = 3 cu.cm

So, (b) is correct.

Sol.5. (a) is correct.

Chapter-16 Data Handling

Test Prep 16.1

Sol.1.

Choices	Tally marks	Number of students
Zoo	𝍸 ||	7
Museum	𝍸 𝍸 𝍸 |	16
Garden	𝍸 ||||	9
Beach	𝍸 𝍸 |||	13
Planetarium	𝍸 |||	8

(a) 53

(b) Museum

(c) No. of Students = 13 – 8 = 5

Sol.2.

Day	Tally marks	Number of students
Monday	𝍸 𝍸 ||	12
Tuesday	𝍸 𝍸 𝍸 |||	18
Wednesday	𝍸 𝍸 𝍸 𝍸 |	21
Thursday	𝍸 ||||	9
Friday	𝍸 𝍸 𝍸 |||	18

(a) 21

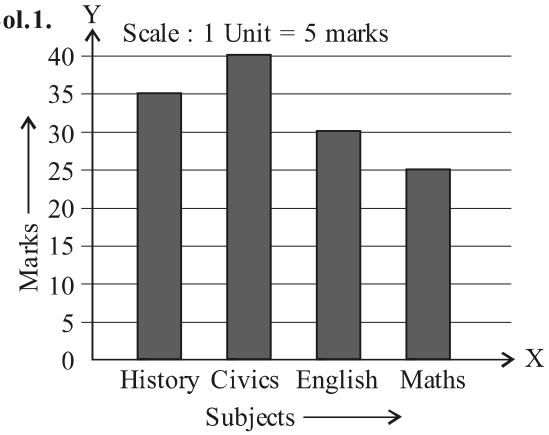
(b) Tuesday and Friday

(c) Wednesday

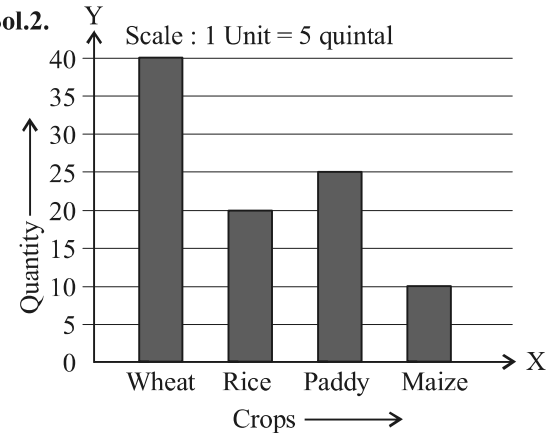
(d) Total books = 12 + 18 + 21 + 9 + 18 = 78

Test Prep 16.2

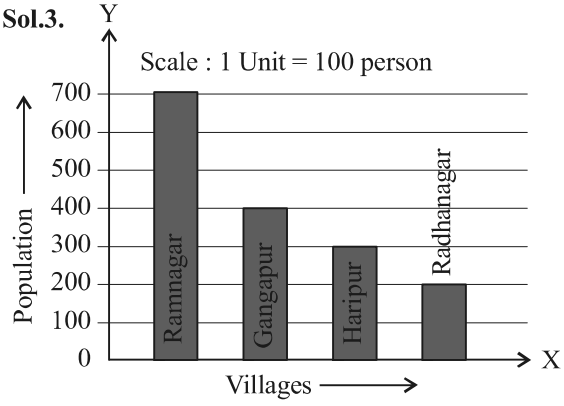
Sol.1.



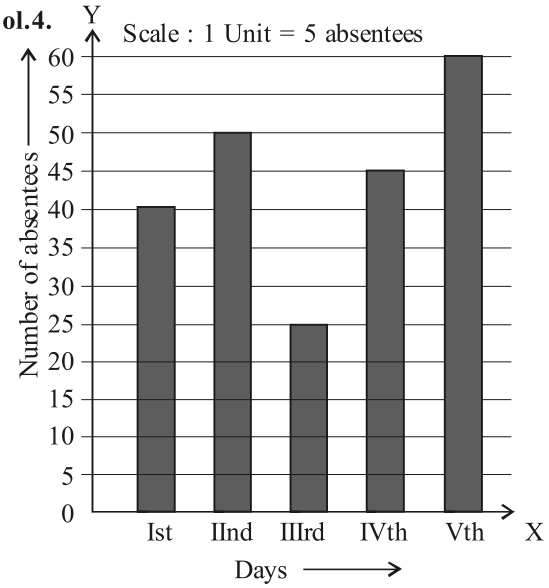
Sol.2.



Sol.3.



Sol.4.



Sol.5. (a) Population of various cities of Rajasthan
(b) 2
(c) 4

Sol.6. (a) February
(b) 6 cm
(c) May

Test Prep 16.3

Sol.1. (a) A (b) C (c) B

Sol.2. (a) Adventure
(b) Mystery
(c) Adventure

Sol.3. (a) (i) Rohan $= \frac{1}{4}$ of $40 = \frac{1}{4} \times 40 = 10$

(ii) Pihu $= \frac{1}{4} \times 40 = 10$

(iii) $\frac{1}{8} \times 40 = \frac{1}{8} \times 40 = 5$

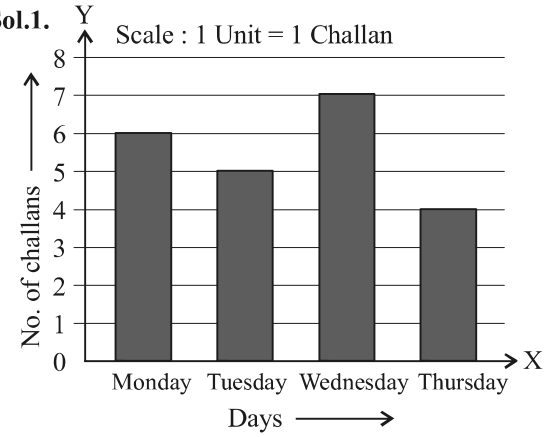
(iv) Dolly $= 40 - (10 + 10 + 5)$

(b) Dolly
(c) Rohan and Pihu
(d) Marks $= 10 - 5 = 5$

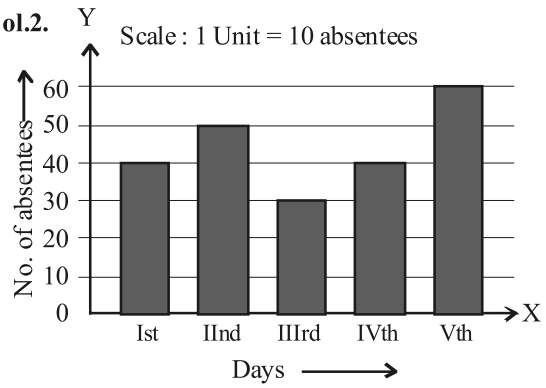
Sol.4. (a) March and April
(b) January
(c) 400
(d) No. of jeans $= 700 - 500 = 200$

Maths Skill

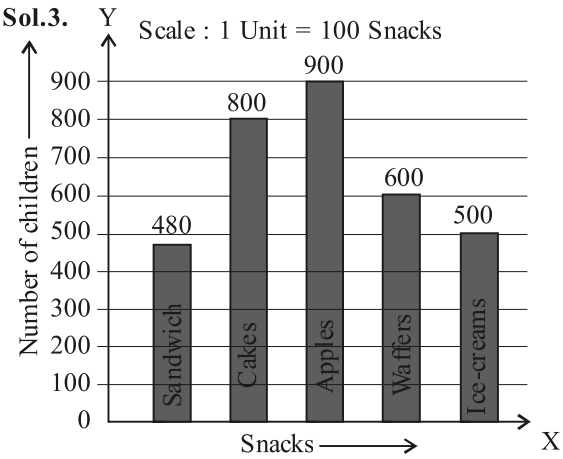
Sol.1.



Sol.2.



Sol.3.



Sol.4. (a) 40 (b) 70 (c) Maths (d) Hindi

Maths Olympiad

Tick (✓) the correct answer.

Sol.1. (c)

Sol.2. (b) * = 3
* * * * * = 5 × 3 = 15

Sol.3. (c)
Sol.4. (b)
Sol.5. (c)

Examination Preparation - II

Sol.1. (i) (a), (ii) (b) (iii) (a)
(iv) (d) (v) (d)

Sol.2. (a) rectangles (b) 35 (c) 7
(d) 1200 (e) 8200

Sol.3. (a) F (b) F
(c) T (d) T

Sol.4. Side $= \frac{\text{Perimeter}}{3} = \frac{4.521}{3}$ cm $= 1.507$ cm

Sol.5. Volume $= l \times b \times h$
$= 12 \times 4 \times 2$ cu.cm $= 96$ cu.cm

Sol.6. (a) $2\frac{1}{2} = \frac{5}{2} = \left(\frac{5}{2} \times 100\right)\% = 250\,\%$

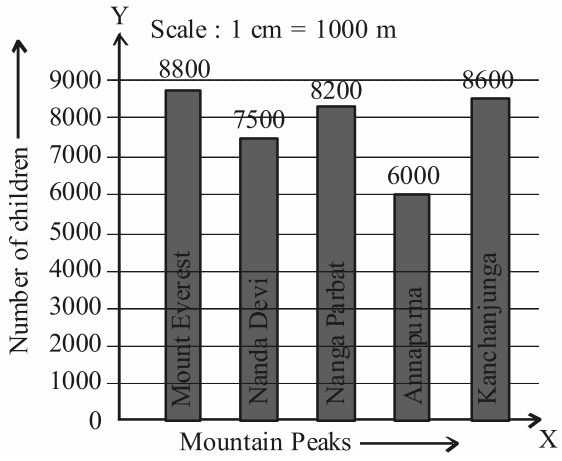
(b) $3\frac{3}{4} = \frac{15}{4} = \left(\frac{15}{4} \times 100\right)\% = 375\%$

Sol.7. (a) $80\,\% = \frac{80}{100} = \frac{4}{5}$

(b) $10\% = \frac{10}{100} = \frac{1}{10}$

Sol.8. 35% of ₹ $180 = \frac{35}{100} \times 180 =$ ₹ 63

Sol.9.



Sol.10. (a) Studying
(b) Eating
(c) Watching
(d) Watching TV and playing Tennis

Sol.11. Volume of a brick $= 24 \times 14 \times 15$ cu.cm
Volume of wall $= (14 \times 100) \times (8 \times 100) \times 18$ cu.cm

No. of bricks $= \frac{14 \times 100 \times 8 \times 100 \times 18}{24 \times 14 \times 15}$
$= 100 \times 20 \times 2 = 4000$

Sol.12. Perimeter $= 4 \times$ side

Side $= \frac{\text{Perimeter}}{4} = \frac{136}{4} = 34$ m

Area of field $=$ side $\times$ side $= 34 \times 34$ sq.m
$= 1156$ sq.m

Sol.13. Area of ceiling $= 12 \times 8$ sq.m $= 96$ sq.m
Cost of white washing $=$ ₹ 96×5.40
$=$ ₹ 518.40

Sol.14. Total C.P. of plot $=$ ₹ $12,50,000 +$ ₹ $50,000$
$=$ ₹ $13,00,000$
S.P. of plot $=$ ₹ $15,75,000$
Since, S.P. > C.P., so there is a profit.
Profit $=$ S.P. $-$ C.P.
$=$ ₹ $15,75,000 -$ ₹ $13,00,000$
$=$ ₹ $2,75,000$

Sol.15. (a) $0\,^{\circ}C$
(b) $25\,^{\circ}F$
(c) $65\,^{\circ}F$
(d) $-28\,^{\circ}F$

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