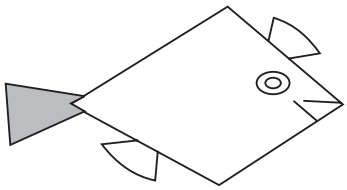
1 The Fish Tale

TIME TO PRACTICE

1. Do yourself.



2.

S. No.	Number	Period	Place Value	Face Value
(i)	7080657	Hundreds	600	6
(ii)	65870680	Lakh	8,00,000	8
(iii)	9658764	Ten lakh	90,00,000	9
(iv)	708858	Ten Thousand	00,000	0
(v)	7685926	Hundred	900	9

3. (i) Place value of 5 in 7,68,526 is 500.

(ii) 9 in 7,69,432 is at thousand place.

(iii) In 72,648,52, underlined digit is at lakh place.

(iv) If a log boat travels with a speed of 5 km/h, then it will cover 20 km in 4 hours

Distance = Speed × time

= 5 × 4 = 20 km.

(v) If a log boat covers 15 km in 5 hours, then the speed of the boat is 3 km/hr.

$$\text{Speed} = \frac{\text{distance}}{\text{time}}$$

$$= \frac{15 \text{ km}}{5 \text{ hr}} = 3 \text{ km/hr}$$

4. (i) Ten thousand one = 10,001.

(ii) Seven thousand eleven = 7,011.

(iii) Three lakh seven thousand four = 3,07,004.

(iv) Three million two hundred forty five thousand four = 3,245,004.

(v) Forty two million seventy three thousand three hundred = 42,073,300.

5. (i) 7264852

Indian system : 72,64,852 = Seventy two lakh sixty four thousand eight hundred fifty two.

International system : 7,264,852 = Seven million two hundred sixty four thousand eight hundred fifty two.

(ii) 8006543

Indian system : 80,06,543 = Eight lakh six thousand five hundred forty three.

International system : 8,006,543 = Eight million six thousand five hundred forty three.

(iii) 920085

Indian system : 9,20,085 = Nine lakh twenty thousand eighty five.

International system : 920,085 = Nine hundred twenty thousand eighty five.

6. (i) 70856 = 70000 + 0000 + 800 + 50 + 6

(ii) 7085692 = 7000000 + 000000 + 80000 + 5000 + 600 + 90 + 2

(iii) 3095882 = 3000000 + 000000 + 90000 + 5000 + 800 + 80 + 2

7. (i) 70000 + 80 + 3 = 70,083

(ii) 900000 + 80000 + 7000 + 600 + 20 + 9 = 9,87,629

8. (i) 76854 Successor = 76854 + 1 = 76,855
Predecessor = 76854 – 1 = 76,853

(ii) 900000 Successor = 900000 + 1
= 9,00,001
Predecesor = 900000 – 1
= 8,99,999

(iii) 100000 Successor = 100000 + 1
= 1,00,001
Predecessor = 100000 – 1
= 99,999

(iv) 7699 Successor = 7699 + 1 = 7,700
Predecessor = 7699 – 1 = 7,698

9. (i)
$$\begin{array}{r} 9\ 0\ 8\ 5\ 2 \\ +\ 1\ 3\ 9\ 2\ 6 \\ \hline 1,\ 0\ 4,\ 7\ 7\ 8 \end{array}$$

Estimate sum = 104780

(ii)
$$\begin{array}{r} 7\ 6\ 8\ 5\ 4 \\ +\ 2\ 1\ 2\ 3\ 9 \\ \hline 9\ 8\ 0\ 9\ 3 \end{array}$$

Estimate sum = 98090

10. (i) 908,542; 98,542; 706,425; 632,541

Ascending = 98542, 632541, 706425, 908542

Descending = 908542, 706425, 632541, 98542

(ii) 850,069; 63,209; 60,329; 805,069

Ascending = 60329, 63209, 805069, 850069

Descending = 850069, 805069, 63209, 60329

11. Loan taken from bank = ₹ 12,000

Paid every month = ₹ 1250

So, payment for 1 yr. (12 months) = ₹ 1250 × 12

Total money paid = ₹ 15000

Thus, total ₹ 15000 he pays back to the bank.

12. Speed = $\frac{\text{distance}}{\text{time}}$ or distance = speed × time

Distance covered by first boat = 20 × 11 = 220 km.

Distance covered by second boat = 25 × 8 = 200 km.

Hence, more distance covered by first boat.

NCERT CORNER

1. Weight of the kingfish = 8 kg

Total cost of the kingfish = Rs 1200 Weight of 1 kg fish = 1200 ÷ 8 = 150

Fazila sells the kingfish at Rs 150 per kg.

2. Weight of prawns sold by Floramma = 10 kg

Cost of 1 kg prawns = Rs 150

Price of 10 kg prawns = Rs 150 × 10 = Rs 1500

Floramma got Rs 1500 by selling 10 kg prawns.

3. Weight of swordfish sold by Gracy = 6 kg

Cost of 1 kg swordfish = Rs 60

Total money Gracy earned by selling 6 kg of swordfish = Rs 60 × 6= Rs 360

Mini earned Rs 360 by selling sardines.

Cost of 1 kg sardines = Rs 40

Weight of sardines sold by Mini = 360 ÷ 40 = 9 kg

Mini sold 9 kg sardines and earned Rs 360.

4. Total money with Basheer = Rs 100 One-fourth of the money = Rs 100 ÷ 4 = Rs 25

Remaining three-fourth of the money = Rs 100 – Rs 25 = Rs 75

(a) He bought squid for Rs 25.

Cost of 1 kg squid = Rs 50

Now, cost of $\frac{1}{2}$ kg squid = Rs 50 ÷ 2 = Rs 25

Basheer can buy $\frac{1}{2}$ kg squid with Rs. 25.

(b) He bought prawns for Rs 75. Cost of 1 kg prawns = Rs 150 Cost of $\frac{1}{2}$ kg prawns = Rs 150 ÷ 2 = Rs 75

Basheer can buy $\frac{1}{2}$ kg prawns with Rs. 75.

Women's Meenkar Bank

I Number of fisherwomen who join the bank = 20

Money saved by each of them every month = Rs 25

Total money collected in a month = Rs 25 × 20 = Rs 500

Thus, 20 women save Rs 500 every month.

I Now, 1 year = 12 months

10 years = 12 months × 10 = 120 months

Total money saved in 10 years = Rs 500 × 120 = Rs 60,000

Rs 60,000 will be collected in 10 years.

Practice Time

1. (a) Amount of loan taken by Gracy = Rs 4000

Amount of payment every month = Rs 345

We know, 1 year = 12 months

Total amount paid back to the bank in 1 year = Rs 345 × 12 = Rs 4,140

So, Gracy paid Rs 4,140 to bank in 1 year.

(b) 1 year = 12 months

Total amount paid back by Jhansi and her sister in 1 year = Rs 23,520

Amount they paid every month = Rs 23520 ÷ 12 = Rs 1,960

They paid back Rs 1,960 every month.

ATGRADE

1. (a) 1,00,000

(b) Seven zeros.

2. Rice in one sack = 50 kg

Rice in 8 sacks = 50 × 8 = 400 kg

3. The price of 1 litre milk = ₹ 50

The milk will come in ₹ 2000

= 2000 ÷ 50 = 40 litre

4. Weight of raisins made from grapes

$$= \frac{1}{3}$$

Raisins made from 12 kg grapes

$$= 12 \times \frac{1}{3} = 4 \text{ kg}$$

5. Distance covered in one hour = 60 km

Distance covered in 2.30 hours

= 120 + 30 = 150 km

6. Travelled in one hour = 80 km

It will take time to travel 360 km

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}}$$

$$= \frac{360}{80} = \frac{9}{2} \text{ hours}$$

7. The cost of 1 kg apple = ₹ 80

The cost of 12 kg apples = 12 × 80

= ₹ 960

8. The person returned the money in one year = ₹ 78,684

∴ There are 12 months in 1 year.

∴ Paid in 1 month = $\frac{78,684}{12}$ = ₹ 6,557

9. (a) $800 \times \frac{1}{4} = 200$

So, he bought 1 kg of laddu in ₹ 200.

(b) $800 \times \frac{3}{4} = 600$

So, he bought $1\frac{1}{2}$ kg of barfi in ₹ 600.

(c) He bought 1 kg of laddu and $1\frac{1}{2}$ kg of burfi = 1 kg + $1\frac{1}{2}$ kg = $2\frac{1}{2}$ kg = 2500 g

10. The total expenditure of making a water tank

$$= \frac{1,200}{2} + 7 \times 325 + 1 \times 5,500 + 40 \times 45 + 15,000$$

= 600 + 2,275 + 5,500 + 1,800 + 15,000

= ₹ 25,175.

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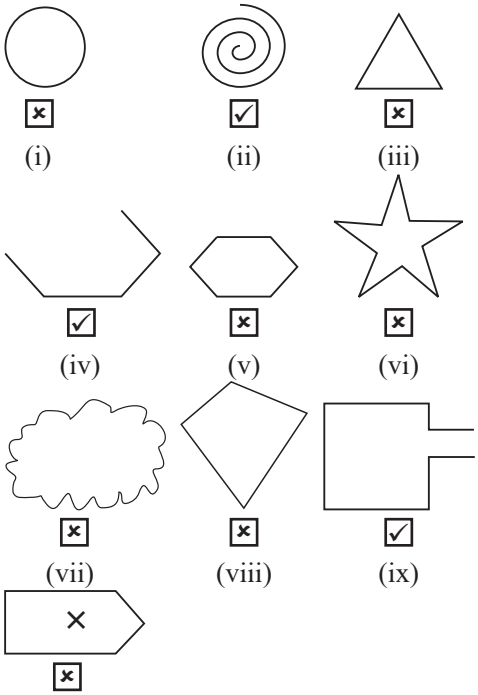
2 Shapes and Angles

TIME TO PRACTICE

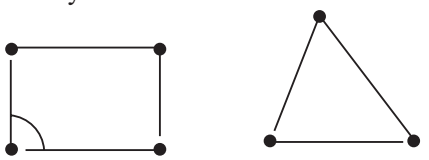
1. Tick (×) for open shapes and cross (✓) for closed shapes.



(i) (ii) (iii) (iv) (v) (vi) (vii) (viii) (ix) (x)

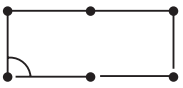
2. Do it yourself

3.

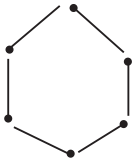


4 right angle (i)

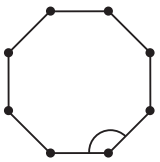
3 acute angle (ii)



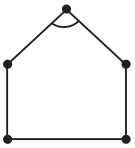
6 right angle (iii)



6 obtuse (iv)



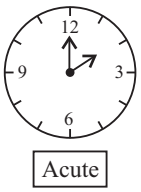
8 obtuse (v)



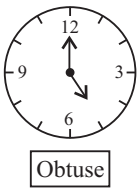
5 obtuse (vi)

4. (i) 35° — acute (ii) 90° — right
(iii) 120° — obtuse (iv) 60° — acute
(v) 180° — straight (vi) 72° — acute
(vii) 156° — obtuse (viii) 150° — obtuse

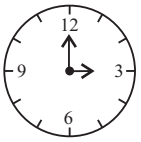
5.



Acute (i)



Obtuse (ii)



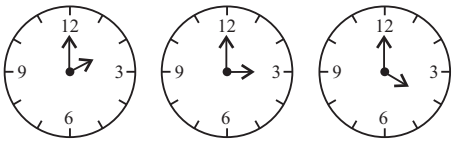
right (iii)

Reflex (iv)

Reflex (v)

Acute (vi)

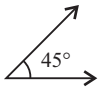
6.



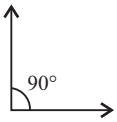
(i) 60° (ii) 90° (iii) 120°

7. (i) 3 (ii) 4 (iii) 4
(iv) 5 (v) 10 (vi) 4

8. (i) 45°



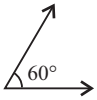
(ii) 90°



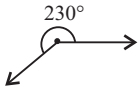
(iii) 120°

(iv) 180°

(v) 60°



(vi) 230°



NCERT CORNER

Practice Time–1

1. All the angles in the figure are equal.

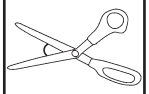
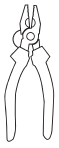
2. (a) The angles marked with yellow are equal.
(b) The angles marked with green are equal.
(c) The angles marked with blue are equal.

3. Do Yourself

4. Do Yourself

Practice Time–2

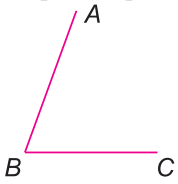
1. Look at the angles in the pictures and fill the table.

Angle	Right angle	More than a right angle	Less than a right angle
			✔
	✔		
	✔		
		✔	
		✔	

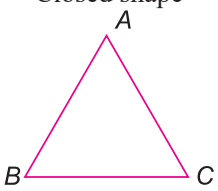
2. **Disclaimer :** The purpose of this section is to make students observe their surroundings. It is highly recommended that the students prepare the answers on their own.

ATGRADE

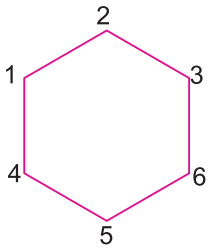
1. Open shape



Closed shape



2.

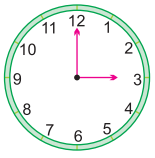


3. 1. Showing 3'O clock on the clock.
2. Wooden table
3. Mirror installed in the almirah.

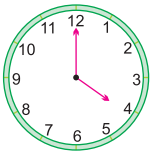
4. 1. Two angles in the letter A of the alphabet are less than right angles and two angles are more than right angle.
2. There are a total of 4 right angles in the letter H of the English alphabet.

5. 1. 45°, 2. 30°.

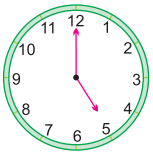
6.



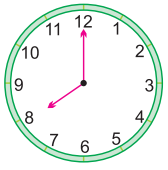
Time : 3:00



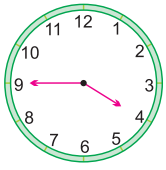
Time : 4:00



Time : 5:00

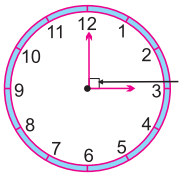


Time : 8:00



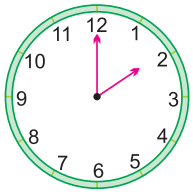
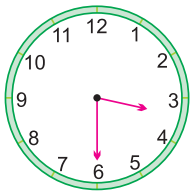
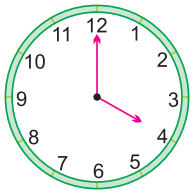
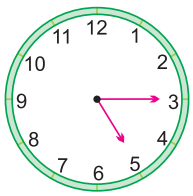
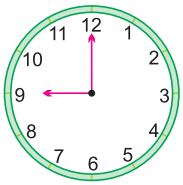
Time : 3:45

7. There are total 8 angles in the given shape.

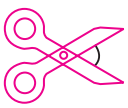
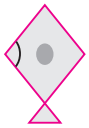
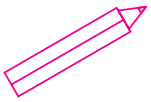
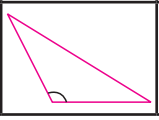
8.  Right angle

In a clock, a right angle is formed between the hour hand and minute hand at 3O'clock.

9.

Time in the Clock	Hands	Angle formed between hands
At 2'O Clock		Less than right angle
At 3:30		Obtuse angle
At 4'O Clock		Obtuse angle
At 5:15		Acute angle
At 9'O Clock		Right angle

10.

S. No.	Angle	Right angle	More than right angle	Less than right angle
1.				✓
2.		✓		
3.				✓
4.			✓	
5.		✓		
6.				✓
7.		✓		
8.			✓	

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3 How Many Squares

TIME TO PRACTICE

1. (i) Perimeter = 6 + 3 + 2 + 2 + 2 + 3 + (6 – 2)
= 18 + 4 = 22 cm

(ii) Perimeter = 8 + 12 + 4 + 10 + (12 – 10) + (8 – 4)
= 34 + 2 + 4 = 40 cm

(iii) Perimeter = 5 + 5 + 4 + 4 = 18 cm

(iv) Perimeter = 3 + 3 + 5 + 5 + 4 + 4
= 24 cm

2. Area = $2 + 4 + 4 + 2 + 4 \times \frac{1}{2}$

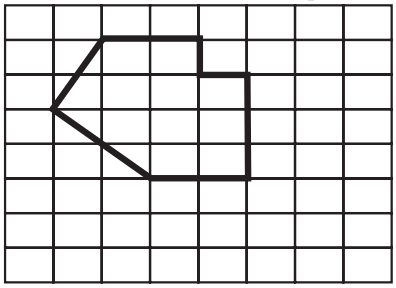
= 12 + 2 = 14 square units

Area = 1 + 1 + 1 = 3 square units

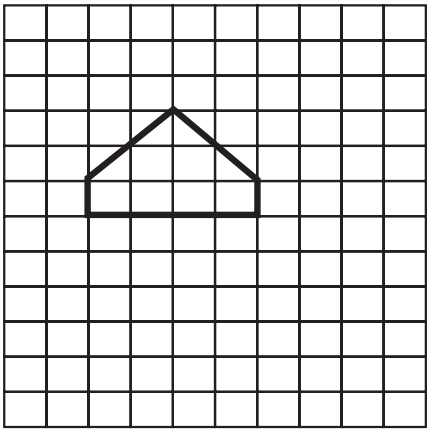
Area = 1 + 1 + 1 + 1 + 1 = 5 square units

[**Note :** more than half is equal to 1]

3.

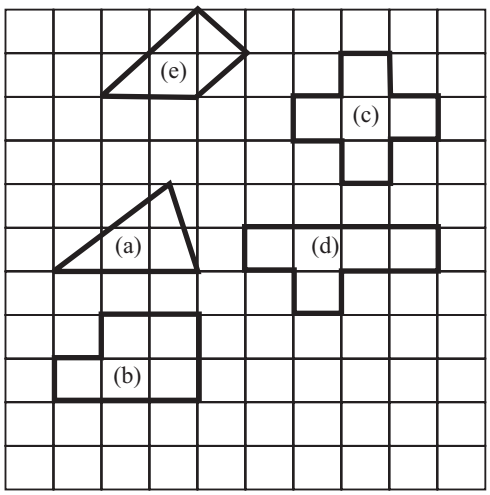


12 sq units



8 sq units

4.



P of (a) = $1 + 1 + \frac{1}{2} + \frac{1}{2}$

= 3 sq cm to

P of (b) = 5

P of (c) = 5 sq cm to

P of (d) = 5 sq. cm to

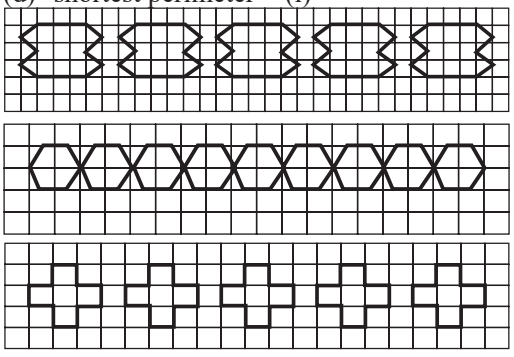
5. (a) maximum area = (iv)

(b) largest perimeters = (iv)

(c) most no. of squares = (iv)

(d) shortest perimeter = (i)

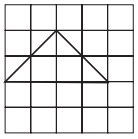
6.

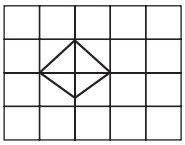


NCERT CORNER

Practice Time–1

1.



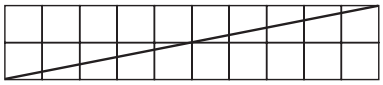
2. 

The given figure comprises of 2 half-f illed squares and 2 squares that are less than half-filled. Thus, we will ignore the squares that are less than half f illed.

So, area of the given figure = 1 square cm

Therefore, it clearly proves that the area of the figure i.e. 1 square cm is less than 2 square cm.

3. (a) The given rectangle is divided into two equal triangles by drawing a line as shown below.



Area of rectangle = 20 square cm

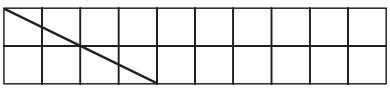
Area of each triangle = 12 of area of rectangle

= (20 ÷ 2) square cm = 10 square cm

(b) The given rectangle is divided into two equal rectangles by drawing a line as shown below.

Area of rectangle = 20 square cm Thus, area of each small rectangle = 12 of area of rectangle = (20 ÷ 2) square cm = 10 square cm

(c) The given rectangle is divided into one rectangle and two equal triangles by drawing 2 lines as shown below.



We will consider a square as complete if it is more than half-filled, and will ignore a square if it is less than half-filled.

Thus, in the red shaded region, we have 2 completely filled squares and 2 squares that are more than half-filled. Thus, the area of red triangle = 4 square cm

Similarly, the area of green triangle = 4 square cm Now, the area of remaining portion i.e. the rectangle contains 12 completely filled squares.

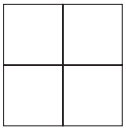
- Thus, the area of rectangle = 12 square cm.
- Area of each of the triangle is 4 square cm.

Disclaimer : The answer to part (c) of the question may vary from student to student. The answer provided here is for reference only.

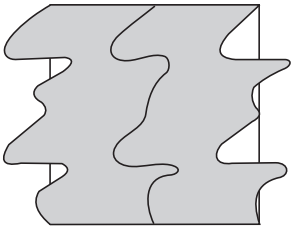
Practice Time–2

The shapes C and D will tile a floor without leaving any gaps. Area of each shape = 2 × 2 = 4 square cm.

Design with shape C



Design with shape D



Disclaimer : The answer may vary from student to student. It is highly recommended that the students prepare the answer on their own.

ATGRADE

1. (a) Perimeter of shape (a) = 16 cm

Perimeter of shape (b) = 14 cm

So, the perimeter of shape (b) is smaller.

(b) Area of rectangle (a) = 1 × 7 = 7 cm^2

Area of rectangle (b) = 3 × 2 = 6 cm^2

The area of shape (a) is more.

2. (a) The area of the triangle is half of the area of the square.

Hence, the area of the triangle = 2 sq. cm.

(b) Given, the area of a square = 1 sq. cm.

Hence, the area of the square shape = 8 sq. cm.

3. Given, the area of rectangle = 30 sq. cm
The area of a triangle is half of the rectangle.
Then, area of the triangle = 15 sq. cm.

4. The estimated area of the leaf = 5 sq. cm.
Scale : 1 square = 1 cm, then the estimated area of leaf will be 5 sq. cm.

5. (a) Area of shape A = $6 \times 4 = 24$ cm^2

Area of shape B = $5 \times 5 = 25$ cm^2

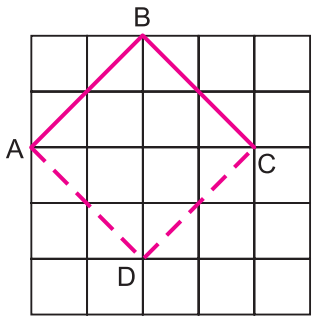
The area of shape B is more.

(b) The perimeter of shape A = 20 cm

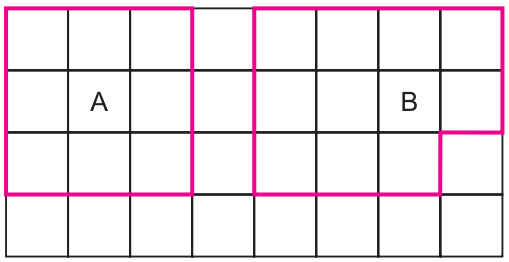
The perimeter of shape B = 20 cm

Hence, the perimeters of both rectangles are same.

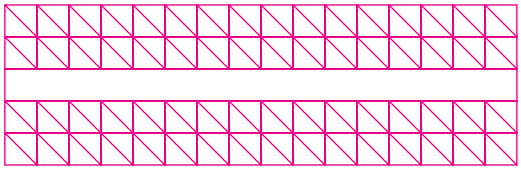
6.



7.



8.



9. (a) The perimeter of postal stamp A is maximum.

(b) The postal stamp C covers six squares of side 1 cm.

(c) The perimeter of postal stamps D and F is same.

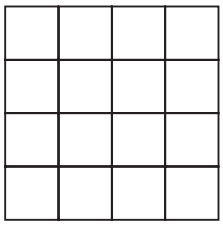
(d) Perimeter of the smallest postal stamp E is 8 cm^2.

(e) The area of postal stamp B = 8 cm^2

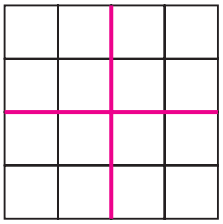
The area of postal stamp D = 12 cm^2

Difference = $12 - 8 = 4$ cm^2

10. (a) The area of each triangle in equal triangles = 8 sq. units

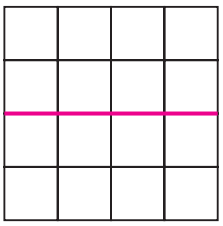


(b)



The area of each square in four equal squares = 4 sq. units

(c)



The area of each rectangle in two equal rectangles = 8 sq. units.

❑❑

4 Parts and Wholes

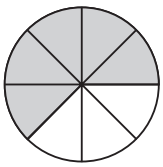
TIME TO PRACTICE

1. (i) $\frac{2}{10}$ (ii) $\frac{8}{10}$

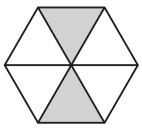
(iii) $\frac{3}{8}$ (iv) $\frac{5}{10}$

2. (i) $\frac{2}{6}$ (ii) $\frac{1}{4}$

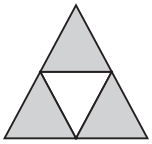
(iii) $\frac{3}{6}$ (iv) $\frac{4}{5}$

3. (i) 

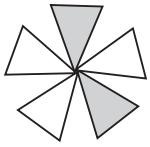
$\frac{5}{8}$

(ii) 

$\frac{2}{6}$

(iii) 

$\frac{3}{4}$

(iv) 

$\frac{2}{5}$

4. (i) $\frac{1}{3} = \frac{1\times2}{3\times2} = -$

$= \frac{1\times3}{3\times3} = \frac{3}{9}$

$= \frac{1\times4}{3\times4} = \frac{4}{12}$

$= \frac{1\times5}{3\times5} = \frac{5}{15}$

$= \frac{1}{3}, \frac{2}{6}, \frac{3}{9}, \frac{4}{12}, \frac{5}{15}$

(ii) $\frac{2}{5} = \frac{2\times2}{5\times2} = \frac{4}{10}$

$= \frac{2\times3}{5\times3} = \frac{6}{15}$

$= \frac{2\times4}{5\times4} = \frac{8}{20}$

$= \frac{2\times5}{5\times5} = \frac{10}{25}$

$\frac{2}{5} = \frac{4}{10}, \frac{6}{15}, \frac{8}{20}, \frac{10}{25}$

5. (i) No, $\frac{1}{2}\times15 = \frac{15}{2}$

(ii) Yes, $\frac{3}{4}\times24 = 18$

(iii) Yes, $\frac{1}{4}\times60 = 15$

(iv) Yes, $\frac{2}{5}\times100 = 40$

6. (i) $\left(\frac{1}{4}\right), \frac{3}{6}, \left(\frac{2}{8}\right), \left(\frac{12}{48}\right), \frac{2}{5}$

(ii) $\left(\frac{3}{5}\right), \frac{6}{18}, \frac{3}{10}, \left(\frac{9}{15}\right)$

(iii) $\left(\frac{2}{7}\right), \frac{1}{14}, \left(\frac{14}{49}\right), \frac{5}{19}, \frac{7}{21}$

7. (i) No $\frac{4}{5}$ and $\frac{3}{25}$

(ii) Yes $\frac{7}{21}$ and $\frac{21}{63}$

(iii) Yes $\frac{5}{10}$ and $\frac{1}{2}$

(iv) Yes $\frac{2}{5}$ and $\frac{10}{25}$

8. (i) $\frac{4}{5}\boxed{<}\frac{9}{5}$

(ii) $\frac{2}{4}\boxed{=}\frac{8}{16}$

(iii) $\frac{1}{7}\boxed{<}\frac{3}{5}$

(iv) $\frac{4}{9} \boxed{>} \frac{3}{18}$

(v) $\frac{3}{7} \boxed{>} \frac{4}{14}$

(vi) $\frac{3}{5} \boxed{>} \frac{15}{30}$

9. (i) $\frac{1}{4}$ of $20 = \frac{1}{4} \times 20 = 5$

(ii) $\frac{3}{4}$ of $100 = - \times 100 = 75$

(iii) $\frac{2}{6}$ of $18 = \frac{2}{6} \times 18 = 6$

(iv) $\frac{3}{5}$ of $500\text{ m} = \frac{3}{5} \times 500 = 300\text{ m}$

10. (i) (a) $\frac{1}{2} \times 60 = 30$ seconds

(b) $2\frac{1}{3}$ minute $= \frac{7}{3} \times 60 = 140$ seconds

(ii) (a) $5\frac{1}{2}\text{m} = \frac{11}{2} \times 100 = 550\text{ cm}$

(b) $\frac{1}{4}\text{ m} = \frac{1}{4} \times 100 = 25\text{ cm.}$

(iii) (a) $\frac{1}{4}\text{ km} = \frac{1}{4} \times 1000 = 250\text{ m}$

(b) $1\frac{1}{2} = \frac{3}{2} \times 1000 = 1500\text{ m}$

(iv) (a) $\frac{1}{10}$ litre $= \frac{1}{10} \times 1000 = 100\text{ ml}$

(b) $\frac{3}{4}$ litre $= \frac{3}{4} \times 1000 = 750\text{ ml}$

11. (i) $\frac{8}{8 \times 9} = \frac{8}{72} = \frac{1}{9}$

(ii) Triangle and diamond

$\frac{8 \times 2}{8 \times 9} = \frac{16}{72} = \frac{2}{9}$

12. Cake $= 2\frac{1}{3}\text{ kg} = \frac{7}{3}\text{ kg}$

Eaten cake by him $= 1\frac{1}{3}\text{ kg} = \frac{4}{3}\text{ kg}$

left Cake $= \frac{7}{3} - \frac{4}{3} = \frac{7-4}{3} = \frac{3}{3} = 1\text{ kg}$

13. Total no. of students = 96

Number of boys $= \frac{1}{6}$ of 96

$= \frac{1}{6} \times 96 = 16$ Boys

14. Total apples $= 100\frac{1}{4}\text{ kg} = \frac{401}{4}\text{ kg}$

Distributed in 2 people $= \frac{401}{\quad} \div$

$= \frac{401}{4} \times \frac{1}{2} = \frac{401}{8} = 50\frac{1}{8}\text{ kg}$

NCERT CORNER

Practice Time–1

(A) Total number of pieces in the chocolate bar = 12

Manju gives one-fourth of the chocolate to Raji. Number of pieces of chocolate given to Raji = 12 ÷ 4 = 3

Thus, Raji got 3 pieces of chocolate. Now, Manju gives one-third of the chocolate to Sugatha. Number of pieces of chocolate given to Sugatha = 12 ÷ 3 = 4

Thus, Sugatha got 4 pieces of chocolate. Now, Manju gives one-sixth of the chocolate to Sheela. Number of pieces of chocolate given to Sheela = 12 ÷ 6 = 2

Thus, Sheela got 2 pieces of chocolate.

Total number of pieces of chocolate given to Raji, Sugatha and Sheela = 3 + 4 + 2 = 9

Total number of pieces of chocolate left in the bar = 12 – 9 = 3

As Manju ate the remaining part of the chocolate, she will get 3 pieces of chocolate.

Part of the chocolate eaten by Manju = 14

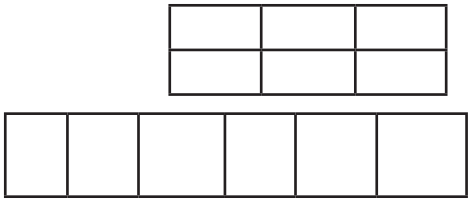
(B) Since one triangle is divided into three equal parts, therefore, each part is one- third $\left(\frac{1}{3}\right)$ of

the whole triangle. Let us $\frac{1}{3}$ in each part and colour them in a different colour as shown in the above figure.

In order to show that these parts are equal. Let us name them, T_1 T_2 and T_3. Trace any of them, say T_1. Now place traced part over T_2 and T_3. We find that T_1 covers T_1, T_2 and T_3 are of the same shape and size.

Hence, these triangles are equal.

(C) These rectangles can be divided into six equal parts as follows :



Practice Time–2

1. Distance travelled by Raheem to reach school from home = $1\frac{1}{4}$ km

Distance travelled by Raheem to return home from school = $1\frac{1}{4}$ km

Total distance travelled by Raheem $= 1\frac{1}{4}+1\frac{1}{4}$

$= 1+1\frac{1}{4}+\frac{1}{4} = 2 + \frac{2}{4} = 2 + \frac{1}{2} = 2\frac{1}{2}$ km.

Thus, the total distance travelled by Raheem to go and return from school is $2\frac{1}{2}$ km.

2. Cost of a pen and a pencil = Rs $7\frac{1}{2}$

Total money given to the shopkeeper = Rs 10

Total money returned to Latha by the shopkeeper

= Rs 10 – Rs $7\frac{1}{2}$

$= 10-7-\frac{1}{2} = 3-\frac{1}{2}$ = Rs. $2\frac{1}{2}$

We know that, 1 quarter rupee = 25 paise 1 half rupee = 50 paise

Now, the shopkeeper can return Rs $2\frac{1}{2}$ in the following ways :

(a) 1 half rupee coin and 8 quarter rupee coins

(b) 4 half rupee coins and 2 quarter rupee coins

(c) 2 half rupee coins and 6 quarter rupee coins

(d) 3 half rupee coins and 4 quarter rupee coins

3. (a) The correct time for the arrival of the train is quarter to 7 = 6 : 34 hrs

But, the train is late by half an hour.

So, expected time of the arrival of the train

The right time is a quarter to 7 i.e. 6 : 45

But, train is delayed by half an hour i.e. 30 minutes.

So, exact time train will arrive at 6 : 45 + 0 : 30 = 7 : 14

Thus, the expected time of the arrival of the train is quarter past 7.

(b) Expected time of the arrival of the train = 7 : 14 hrs.

Nazia gets off at a station after $2\frac{1}{2}$ hrs. of boarding the train.

Time at which Nazia will get off =

From the question,

Nazia gets off at a station after = 2 : 30 hours

Then, total time taken by Nazia to reach = 2 : 30 + 7 : 15 = 9 : 45

Thus, Nazia will get off from the train at quarter to 10.

(c) Shaji will reach Emakulam by this train after 5 hours.

Expected time of the arrival of the train = 7 : 14 hrs

Expected time at which Shazi will reach Ernakulam =

From the question, it is given that,

Shaji will take 5 hours to reach Ernakulam

Then, total time taken by Shaji to reach Emakulam = 7 : 15 + 5 = 12 : 15

Thus, Shazi will reach Ernakulam at quarter past 12.

ATGRADE

1. (a) Shaded part of the rectangle = $\frac{1}{3}$

(b) Shaded part = $\frac{3}{5}$

2. Total coins of ₹ 1 with Manoj = 100

Coins given to Nisha = $100 \times \frac{2}{5}$

= 40 coins

3. The shaded part of the grid = $\frac{8}{16} = \frac{1}{2}$

4. (a) 2 rupees = 200 paise

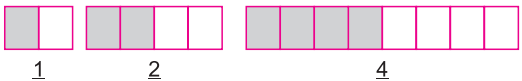
$= \frac{5}{200} = \frac{1}{4}$

(b) Sameer sleeps for a total of 6 hours

$= \frac{6}{24} = \frac{1}{4}$

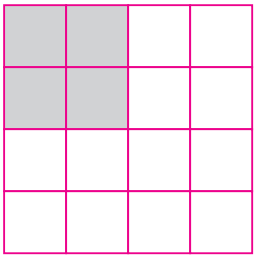
Hence, Sameer sleeps $\frac{1}{4}$ part of the day.

5.



$\frac{1}{2}$ $\frac{2}{4}$ $\frac{4}{8}$

6.



7. Time of each period = 45 min

1 hour = 60 min = $\frac{45}{60} = \frac{3}{4}$

Hence, 45 minutes (one period) is $\frac{3}{4}$ part of an hour.

8. (a) 2 quarters will make half.

(b) $4 \times \frac{1}{8}$ together will make $\frac{1}{2}$.

(c) There are two $\frac{1}{8}$ in $\frac{1}{4}$.

9. (a) Wahid is growing tomatoes in the largest part of his field. This is $\frac{3}{9} = \frac{1}{3}$ part of the field.

(b) He is growing potatoes in $\frac{2}{9}$ part.

(c) He is growing chilli and spinach in $\frac{1}{9}$ part of the field.

10. Raji got chocolates = $12 \times \frac{1}{4} = 3$

Sugandha got chocolates = $12 \times \frac{1}{3} = 4$

Sheela got chocolates = $12 \times \frac{1}{6} = 2$

Manju will get 3 chocolates.

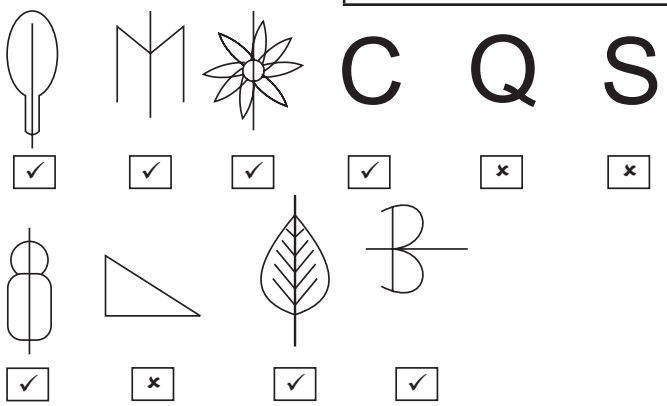
So, Manju got $\frac{1}{4}$ part.

❑❑

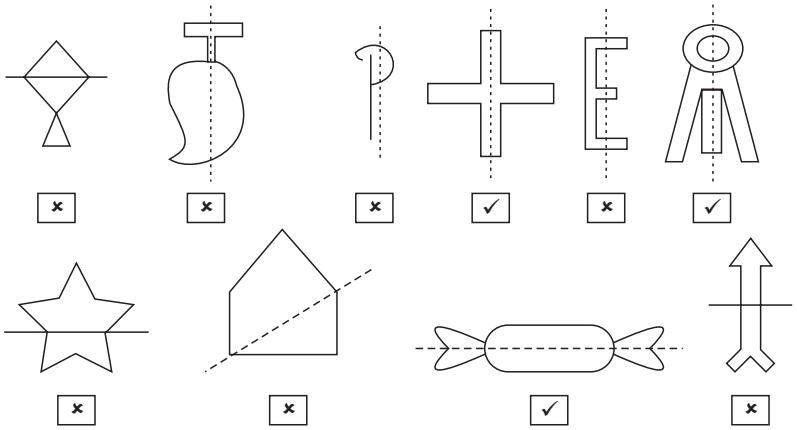
5 Does it Look the Same

TIME TO PRACTICE

1.



2.



3. (iii)

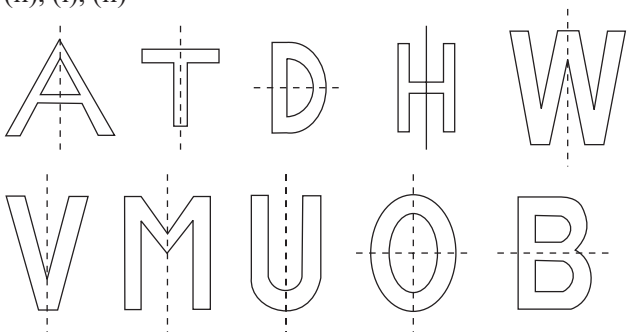
4. (i) 4, 8, 12, 16, 20, **24, 28, 32**

(ii) 4, 9, 16, 25, 36, **49, 64, 81**
(2^2, 3^2, 4^2, 5^2, 6^2)

(iii) 10, 20, 30, 40, 50, **60, 70, 80**

5. (ii), (i), (ii)

6.



NCERT CORNER

Practice Time–1

1. H, I, X, N, S, Z and O.

2. MOW, SWIMS, SIS, and NOON read the same on half a turn.

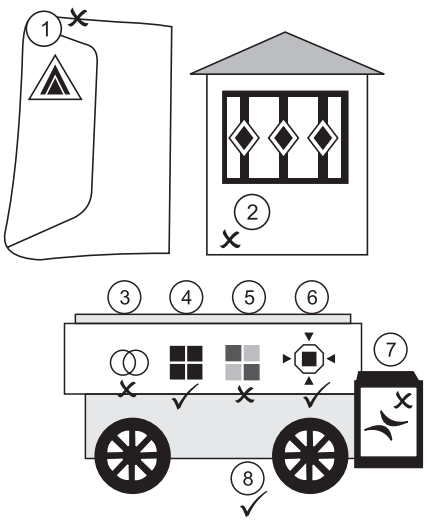
3. 0, 1 and 8 are the numbers that look the same after half a turn.

4. 2 digit numbers that look the same on half a turn are 11, 88. 3 digit numbers that look the same half a turn are 101, 111, 808, 888, 818, 181. 4 digit numbers that look the same on half a turn are 1001, 1111, 8008, 8888, 8118, 1881.

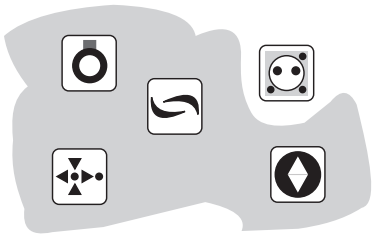
5.

Practice Time–2

(A)



(B)



(C)

		On $\frac{1}{4}$ turn	On half turn
(a)			
(b)			
(c)			
(d)			

Image (a), (c) and (d) do not look the same on $\frac{1}{4}$ turn. Image (a) does not look the same on $\frac{1}{2}$ turn.

- Fan (a) will look the same on $\frac{1}{3}$ turn.
- Shape after $\frac{1}{3}$ turn.

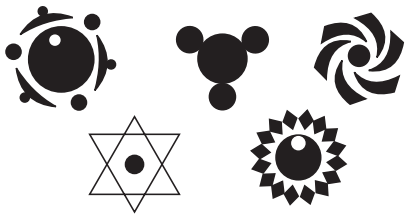
Practice Time–3

1.

		$\frac{1}{3}$ turn	$\frac{1}{6}$ turn
(a)			
(b)			
(c)			
(d)			

2. (a) and (b)

(c)



3. Figures that look the same after 13 turn :

4. Figures that look the same after 16 turn :

Disclaimer : The answer may vary from students to student, based on his/her experience. The answer provided here are for reference only.

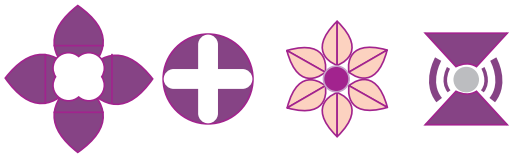
ATGRADE

1. H, I, N, O, S, X and Z.

2. SIS, NOON.

3. 0, 1 and 8.

4.



5. Yes, it looks the same on $\frac{1}{4}$ of the turn.

6. Yes.

7. Fan (a) will look the same on a $\frac{1}{3}$ turn.

8.

	$\frac{1}{3}$	$\frac{1}{6}$
		
		
		
		

9. Following shapes look the same as before on $\frac{1}{3}$ turn.

10. Following shapes look the same as before on $\frac{1}{6}$ turn.

❑❑

6 Be My Multiple I'll be Your factor

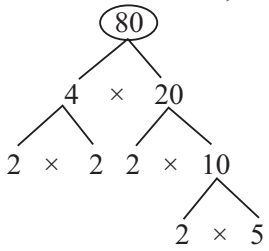
TIME TO PRACTICE

1. (i) 6—6, 12, 18, 24
(ii) 11—11, 22, 33, 44
(iii) 15—15, 30, 45, 60
(iv) 18—18, 36, 54, 72
(v) 32—32, 64, 96, 128

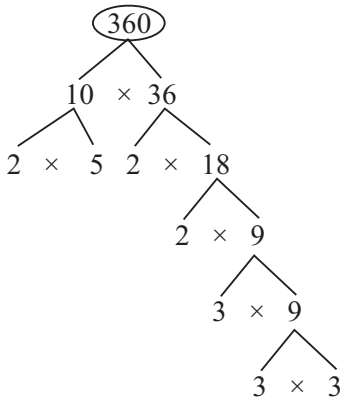
2. (i) 12—1, 2, 3, 4
(ii) 18—1, 2, 3, 6
(iii) 30—1, 2, 3, 5
(iv) 60—1, 2, 3, 4
(v) 72—1, 2, 3, 4

3. (i) 12 = 1, 2, 3, 4, 5, 12
15 = 1, 3, 5, 15
Common factor = 1, 3
(ii) 30 = 1, 2, 3, 5, 6, 10, 15, 30
40 = 1, 2, 4, 5, 8, 10, 20, 40
Commom factor = 1, 2, 5, 10
(iii) 60 = 1, 2, 3, 4, 5, 6, 10, 12, 15, 30, 60
75 = 1, 3, 5, 15, 25, 75
Common factor = 1, 3, 5, 15
(iv) 11 = 1, 11
55 = 1, 5, 11, 55
Common factor = 1, 11

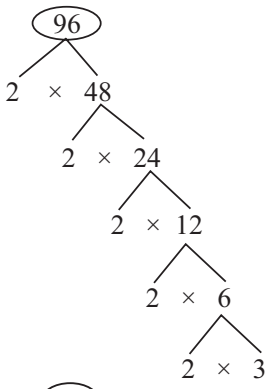
4. (i)



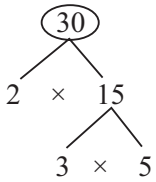
(ii)



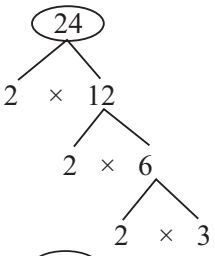
(iii)



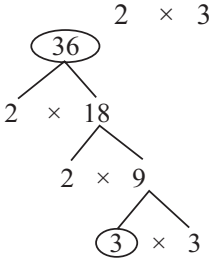
(iv)



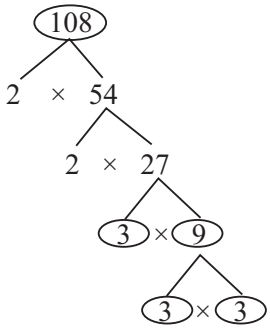
5. (i)

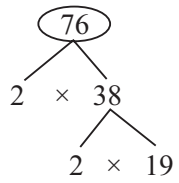


(ii)



(iii)



(iv) 

6. (i) 36, 48

2 | 36
2 | 18
3 | 9
3 | 3
1

2 | 48
2 | 24
2 | 12
2 | 6
3 | 3
1

$36 = 2 \times 2 \times 3 \times 3$

$48 = 2 \times 2 \times 2 \times 2 \times 3$

HCF $= 2 \times 2 \times 3 = 12$

(ii) 16, 30

2 | 16
2 | 8
2 | 4
2 | 2
1

2 | 30
3 | 15
5 | 5
1

$16 = 2 \times 2 \times 2 \times 2$

$30 = 2 \times 3 \times 5$

HCF $= 2$

(iii) 18, 60

2 | 18
3 | 9
3 | 3
1

2 | 60
2 | 30
3 | 15
5 | 5
1

$18 = 2 \times 3 \times 3$

$60 = 2 \times 2 \times 3 \times 5$

HCF $= 2 \times 3 = 6$

7. (i) LCM

12, 16, 20

2 | 12, 16, 20
2 | 6, 8, 10
2 | 3, 4, 5
2 | 3, 2, 5
3 | 3, 1, 5
5 | 1, 1, 1
1, 1, 1

$\therefore$ LCM $= 2 \times 2 \times 3 \times 4 \times 5 = 240$

(ii) 25, 75, 100

2 | 25, 75, 100
2 | 25, 75, 50
3 | 25, 75, 25
5 | 25, 25, 25
5 | 5, 5, 5
1, 1, 1

$\therefore$ LCM $= 5 \times 5 \times 3 \times 4 = 300$

(iii) 4, 18, 32

2 | 4, 18, 32
2 | 2, 9, 16
2 | 1, 9, 8
2 | 1, 9, 4
2 | 1, 9, 2
3 | 1, 9, 1
3 | 1, 3, 1
1, 1, 1

$\therefore$ LCM $= 2 \times 2 \times 9 \times 8 = 288$

(iv) 28, 42, 56

2 | 28, 42, 56
2 | 14, 21, 48
2 | 7, 21, 24
2 | 7, 21, 12
2 | 7, 21, 6
3 | 7, 21, 3
7 | 7, 7, 7
1, 1, 1

$\therefore$ LCM $= 2 \times 2 \times 7 \times 3 \times 2 = 168$

8. Prime numbers

4, 9, (13), (17), (19), 22

27, 33, (37), (41), 42, 44

46, (47), 50

9. HCF by long division method

(i) 128, 250

$128\overline{)250}\,(1$

$\underline{128}$

$122\overline{)128}\,(1$

$\underline{122}$

$\times\times 6\overline{)122}\,(20$

$\underline{12}$

$\times\times 2\overline{)6}\,(3$

$\underline{6}$

$\times$

$\therefore$ HCF $= 2$

(ii) 30, 36, 96

30)96 (3 — 6)36 (6

90 — 36

6)30(5 — ××

30

××

∴ HCF = 6

(iii) 18, 36, 38

18)38 (2 — 2)36 (18

36 — 2

×2)18(9 — 16

18 — 16

×× — ××

∴ HCF = 2

10.

Numbers	2	3	4	5	6	7	8	9	10	11
(a) 14	✓					✓				
(b) 50	✓			✓						
(c) 36	✓	✓								
(d) 92	✓									

11. (i) 30 = 30, 60, 90, (120), 150, 180, 210, (240), ...

40 = 40, 80, (120), 160, 200, (240), 280, ...

Five common multiple

= 120, 240, 360, 480, 600

(ii) 10 = 10, 20, 30, (40), 50, 60, 70, (80), ...

40 = (40), (80), 120, 160, 200, 240, ...

First five common multiple

= 40, 80, 120, 160, 200

12. (i)

2	24, 30, 36
2	12, 15, 18
2	6, 15, 9
3	3, 15, 9
3	1, 5, 3
5	1, 5, 1
	1, 1, 1

∴ LCM of speeds = 2 × 2 × 3 × 3 × 2 × 5

= 360 km/hr

(ii) 18)30 (1 — 6)24 (4

18 — 24

12)18(1 — ××

12

×6)12(2

12

××

∴ Largest common plot size

= 6 acres

(iii)

2	18, 24, 30
2	9, 12, 15
2	9, 6, 15
3	9, 3, 15
3	3, 1, 5
5	1, 1, 5
	1, 1, 1

LCM = 2 × 3 × 3 × 4 × 5 × 3

= 360 hrs.

(iv) 48, 60, 72

2	48
2	24
2	12
2	6
3	3
	1

2	60
2	30
5	15
5	5
	1

2	72
2	36
2	18
3	9
3	3
	1

48 = (2) × (2) × 2 × 2 × (3)

60 = (2) × (2) × (3) × 5

72 = (2) × (2) × 2 × (3) × 3

Largest common salary = 2 × 2 × 3 = 12

AT GRADE

1. (a) First 5 multiples of the number 4

= 4, 8, 12, 16, 20

(b) First 3 multiples of the number 6

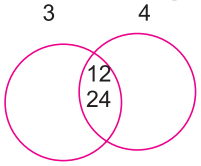
= 6, 12, 18

2. These are multiples of 7.

3. 12 and 24

Multiples of 3 = 3, 6, 9, (12), 15, 18, 21, (24)

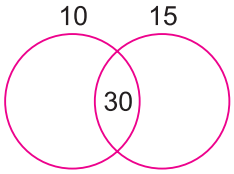
Multiples of 4 = 4, 8, (12), 16, 20, (24)



4. 30

Multiples of 10 = 10, 20, (30)

Multiples of 15 = 15, (30)



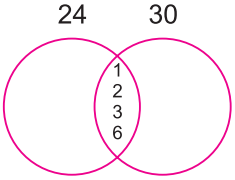
5. (a) Factors of 12 = 1, 2, 3, 4, 6, 12

(b) 15

6. 1, 2, 3, 6

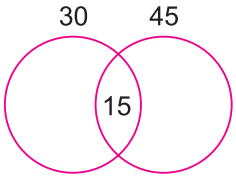
Factors of 24 = [1, 2, 3], 4, (6), 8, 12, 24

Factors of 30 = [1, 2, 3], 5, (6), 10, 15, 30



7. Factors of 30 = 1, 2, 3, 5, 6, 10, (15), 30

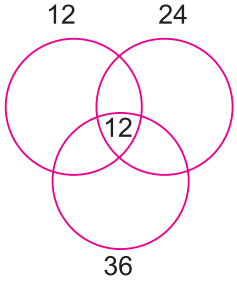
Factors of 45 = 1, 2, 3, 5, 9, (15), 30, 45



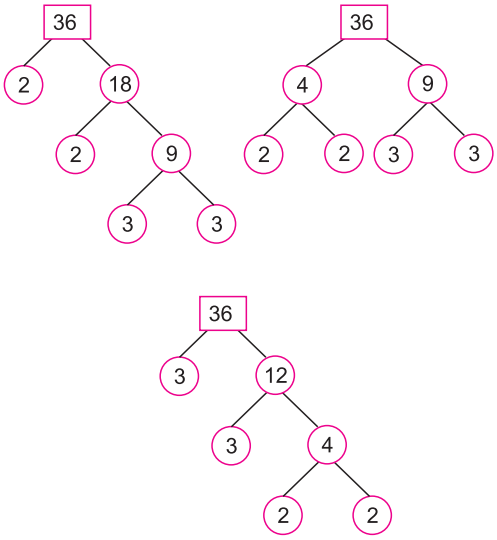
8. Factors of 12 = 1, 2, 3 , 4, 6, (12)

Factors of 24 = 1, 2, 3 , 4, 6, 8, (12), 24

Factors of 36 = 1, 2, 3, 4, 6, 9, (12), 18, 36



9.



10. Measurement of floor of Sonu's room

= 5 m × 3 m

= 500 cm × 300 cm

Here 20 cm is the factor of 500 cm and 300 cm.

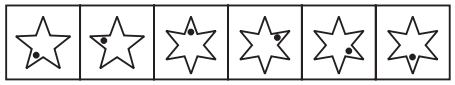
Thus, Sonu should buy 20 cm × 20 cm tiles.

❑❑

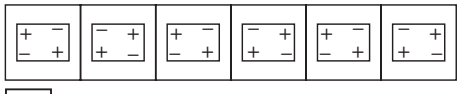
7 Can You See the Patterns

TIME TO PRACTICE

1. (i)



(ii)



2. (iii) ☐

3. (i) 4, 8, 12, 16, 20, 24, 28, 32

(ii) 1, 3, 7, 15, 31 63 127 255

2 4 8 16 32 64 128

(iii) 6, 16, 26, 36, 46, 56, 66, 76

(iv) A_1, B_2, C_3, D_4, E_5 F_6 G_7 H_8

4. 36, 33, 30, 27, 24, 21, 18, 15

20, 15, 10, 5

5. (i)

2	**7**	**6**
9	**5**	**1**
4	**3**	**8**

Sum = 15

(ii)

4	**3**	**8**
9	**5**	**1**
2	**7**	**6**

Sum = 15

(iii)

10	**9**	**14**
15	**11**	**7**
8	**13**	**12**

Sum = 33

6. (i)

			109		
			59	50	
		32	27	23	
		17	15	12	11
	8	9	6	6	5
3	5	4	2	4	1

(ii)

			115		
			60	55	
		33	27	28	
		19	14	13	15
	11	8	6	7	8
4	7	1	5	2	6

7. (a) $1 \times 1 = 1$

$2 \times 2 = 1 + 3$

$3 \times 3 = 1 + 3 + 5$

$4 \times 4 = 1 + 3 + 5 + 7$

$5 \times 5 = 1 + 3 + 5 + 7 + 9$

$6 \times 6 = 1 + 3 + 5 + 7 + 9 + 11$

$7 \times 7 = 1 + 3 + 5 + 7 + 9 + 11 + 13$

$8 \times 8 = 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15$

$9 \times 9 = 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17$

$10 \times 10 = 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19$

(b) $0 \times 9 + 1 = 1$

$1 \times 9 + 2 = 11$

$12 \times 9 + 3 = 111$

$123 \times 9 + 4 = 1111$

$1234 \times 9 + 5 = 11111$

$12345 \times 9 + 6 = 111111$

$123456 \times 9 + 7 = 1111111$

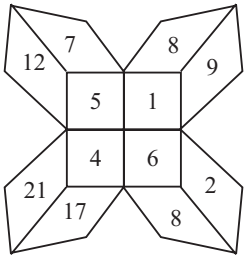
$1234567 \times 8 + 8 = 11111111$

8. (ii) 12 number when reversed = 21
Sum = 12 + 21 = 33

(iii) 32 number when reversed = 23
Sum = 32 + 23 = 55

(iv) 41 number when reversed = 14
Sum = 41 + 14 = 55

9.



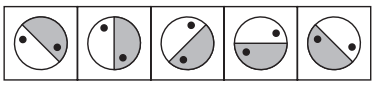
10. (i) $2 + 3 = 5$
$3 + 4 = 7$
$4 + 5 = 9$
$5 + 6 = 11$
$6 + 7 = 13$
$7 + 8 = 15$

(ii) $1 + 3 = 4$
$3 + 5 = 8$
$5 + 7 = 12$
$7 + 9 = 16$
$9 + 11 = 20$
$11 + 13 = 24$

NCERT CORNER

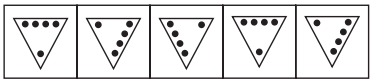
Practice Time

1. (a)

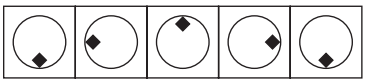


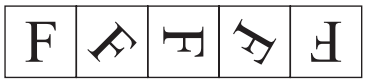
(b)

(c)



(d)

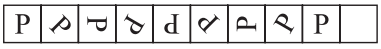


2. (a) 

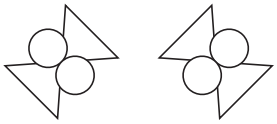
Following the pattern, the next figure will be

( ) (✓) ( )

(b) 

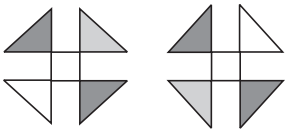
(c) 

3. (a) Rule : Turn by 45° each time



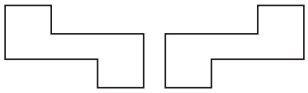
( ) (✓)

(b) Rule : Turn by 90° each time



( ) (✓)

(c) Rule : Turn by 90° each time



(✓) ( )

(d) Rule : Turn by 90° each time

(✓) ( )

Number Surprises

1. (a) Let the age of my friend be 9 years.

Adding 5 to it, we get 9 + 5 = 14

Multiplying this sum by 2, we get 14 × 2 = 28

Subtracting 10, we get 28 – 10 = 18

Dividing it by 2, we get $\frac{18}{2} = 9$

After doing all the operations, we again get the age of our friend's age as the final answer.

Disclaimer : The answer may vary from student to student based on his/her observation. The answer provided here is only for reference.

(b) ☆ Take a number 10

☆ Double it 10 × 2 = 20

☆ Multiply by 5 20 × 5 = 100

☆ Divide your answer by 10 100 ÷ 10 = 10

Disclaimer : The answer may vary from student to student. The answers provided here are only for reference.

(c) ☆ Take a number 6

☆ Double it 6 × 2 = 12

☆ Again double it 12 × 2 = 24

☆ Add the number you took first to the answer 24 + 6 = 30

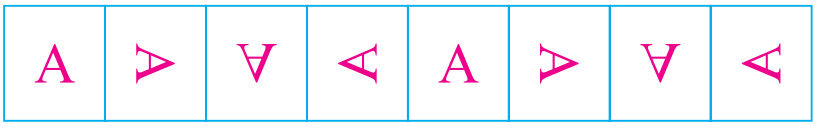
☆ Now again double it 30 × 2 = 60

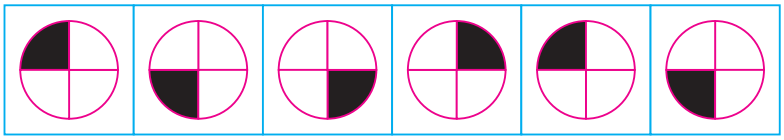
☆ Divide by 10 60 ÷ 10 = 6

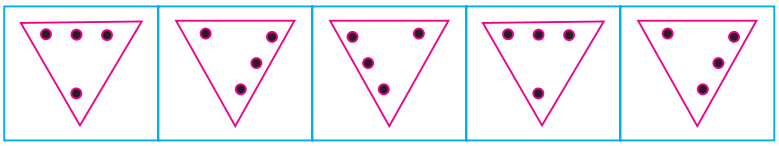
(d)

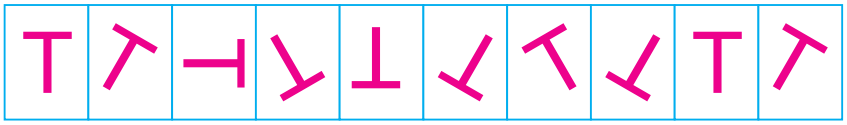
$$\begin{aligned} 1 &= 1 \times 1 \\ 121 &= 11 \times 11 \\ 12321 &= 111 \times 111 \\ 1234321 &= 1111 \times 1111 \\ 1234564321 &= 11111 \times 11111 \\ 12345654321 &= 11111 \times 111111 \end{aligned}$$

ATGRADE

1. (a) 

(b) 

2. (a) 

(b) 

Rule : 120° rotation.

Rule : 45° rotation.

3. $11 \times 11 = 121$

$101 \times 101 = 10201$

$1001 \times 1001 = 1002001$

$10001 \times 10001 = 100020001$

$100001 \times 100001 = 10000200001$

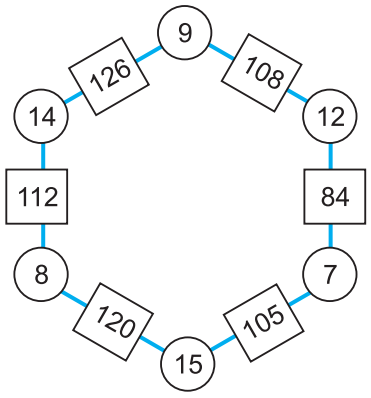
$1000001 \times 1000001 = 1000002000001$

4. (a) $16 + 18 + 25 = 25 + 16 + 18$

(b) $70 + 63 + 34 = 63 + 34 + 70$

5.

38	33	34
31	35	39
36	37	32

6. 

7. $2 + 4 + 6 + 8 + 10 + 12 + 14 + 16 + 18 + 20 = 110$

$22 + 24 + 26 + 28 + 30 + 32 + 34 + 36 + 38 + 40 = 310$

$42 + 44 + 46 + 48 + 50 + 52 + 54 + 56 + 58 + 60 = 510$

$62 + 64 + 66 + 68 + 70 + 72 + 74 + 76 + 78 + 80 = 710$

8. $1 \times 8 + 1 = 9$

$12 \times 8 + 2 = 98$

$123 \times 8 + 3 = 987$

$1234 \times 8 + 4 = 9876$

$12345 \times 8 + 5 = 98765$

$123456 \times 8 + 6 = 987654$

9. $15 \times 2 + 3 = 33$

$15 \times 3 + 3 = 48$

$15 \times 4 + 3 = 63$

$15 \times 5 + 3 = 78$

$15 \times 6 + 3 = 93$

$15 \times 7 + 3 = 108$

$15 \times 8 + 3 = 123$

$15 \times 9 + 3 = 138$

10. First 9 multiplies of 2

= 2, 4, 6, 8, 10, 12, 14, 16, 18

❑❑

8 Mapping Your Way

TIME TO PRACTICE

1. (i) East
(ii) North

2. (i) West Bengal, Jharkhand
(ii) Rajsthan, Gujrat
(iii) Jammu & Kashmir, Himachal Pradesh
(iv) Kerala, Tamil Nadu

3. Actual distance = 46 × 5
= 230 km

4. Distance an map = $\frac{5400}{200}$ = 27 cm.

5. (i) South
(ii) West
(iii) D.S. market
(iv) West

6. (i) Window
(ii) Projector
(iii) South

7. (iv) North
(ii) East
(iii) East
(iv) Himachal Pradesh
(v) West
(vi) Kerala

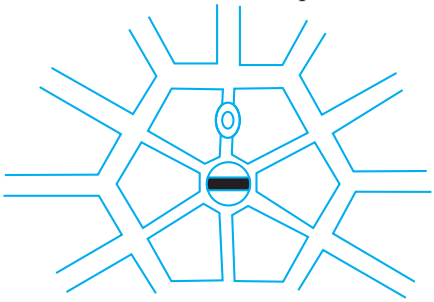
ATGRADE

1. This place is called the Central Hexagon.

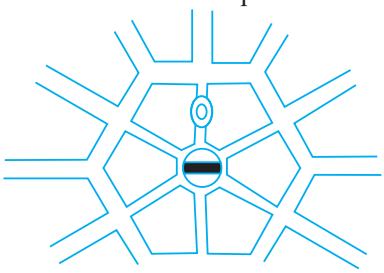
2. Children's park would be on right side.

3. (b)

4. Yes, I have seen the map of a city. On matching map with the photo we found that the condition of India Gate look at the map.



2. Some roads shown in this part of the map clearly be seen.
3. On over way from Rashtrapati Bhawan to India Gate roads like Rafi Marg, Janpath and Man Singh Road are coming.
4. National Stadium can be seen on the map. It cannot seen in the photo.



5. Janpath and Rajpath cut at right angle.
Find out on the map on page 105 and answer the question given below :

6. (i) The Diwan-e-khaas is nearer to the river yamuna.
(ii) Aaramgah is between Diwan-e-khaas and Rang Mahal.
(iii) Diwan-e-khaas and Moti Masjid.
(iv) Hammam is the farthest from Meena Bazar.
(v) Lahori gate is about boom far from Diwan-e-khaas.

7. On the map = 2 cm, in real = 400 km

8. (a) Yes, we have seen the sea.
The sea is infront of Bala in the picture. The sea has been shown in sky blue (blue) colour.
(b) Gujarat, Maharashtra, Karnataka, Kerala, Tamil Nadu, and West Bengal.
(c) Madhya Pradesh.

9. (a) Idlipur is 4.7 cm away from Barfinagar.
(b) 4.7 × 10 = 47 km
(c) Do yourself.
(d) Do yourself.
(e) 5.5 cm = 5.5 × 10 = 55 km.

❑❑

9 Boxes and Sketches

TIME TO PRACTICE

1. (i) False (ii) False (iii) True
(iv) False (v) True (vi) True

2. (i) (d)
(ii) (c)
(iii) (a)
(iv) (b)

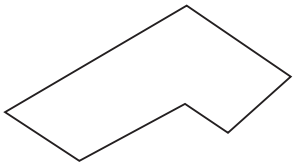
3. (i) 3D (ii) 2D (iii) 3D
(iv) 2D (v) 3D (vi) 3D

4. Cone

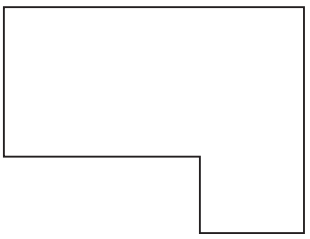
5. 3, 8

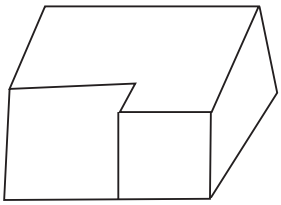
6.

7.



8.

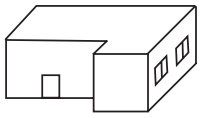




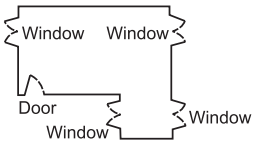
NCERT CORNER

Practice Time–1

1. The doors and windows on the deep drawing of the house is shown below.



There are 2 windows that could not be shown on the deep drawing. These windows are encircle on the floor map as shown below.

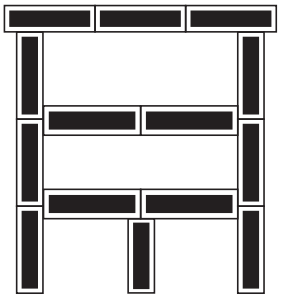


2. Do Yourself.

Practice Time–2

1. The top view of the bridge is shown below.

The front view of the bridge is shown below.



The side view of the bridge is shown below.

2. **Disclaimer :** Students are advised to prepare the answer on their own.

3. Number of cubes in the top layer = 4 + 5 = 9

Number of cubes in the second layer from top = 4 + 5 + 3 + 4 = 16

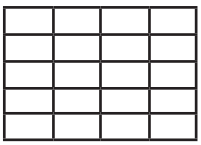
Number of cubes in the third layer from top = 4 + 5 + 3 + 4 + 2 + 3 = 21

Number of cubes in the fourth layer from top = 4 + 5 + 3 + 4 + 2 + 3 + 2 + 1 = 24

Number of cubes in the bottom layer = 4 + 5 + 3 + 4 + 2 + 3 + 2 + 1 + 1 = 25

Total number of cubes in the model = 9 + 16 + 21 + 24 + 25 = 95

The correct drawing for the top and side view is given below :



T, S

ATGRADE

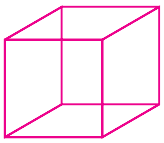
1. (a) A cube has 6 faces.

(b) A cube has 8 corners.

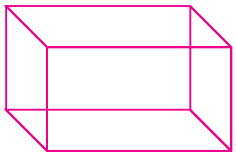
2. An example of a cone-cap.

3. On opening a cylindrical shape a rectangle is formed.

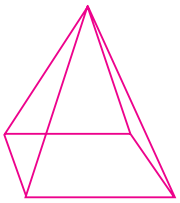
4.



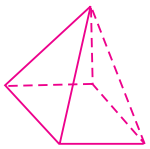
5. On folding the given shape, a closed box shape will be formed.



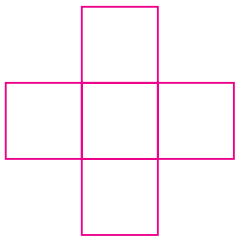
6. The shape formed on folding the shape will be a prism.



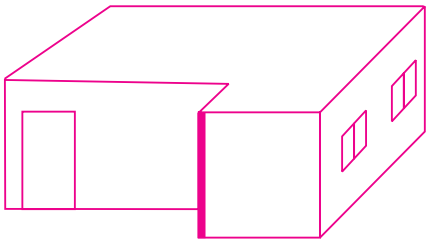
7. There are 4 triangular surface in this shape.



8. An open cube can be made from this shape.



9.



10. (5 × 5 × 7) – (7 × 1) – (5 × 2) – (3 × 3) – (1 × 4)

= 125 – 7 – 10 – 9 – 4 = 95

95 cubes will be required to make a given model.

❑❑

10 Tenths and Hundreths

TIME TO PRACTICE

1. (a) $1.8 \times 6 = 10.8$ cm

(b) $1.5 \times 2.8 = 4.2$ cm

2. (a) $4.64 \times 100 = 464.00$

(b) $1.26 \times 100 = 126.00$

(c) $4.26 \times 10 = 42.60$

(d) $112.12 \div 100 = 1.1212$

(e) $42.84 \div 10 = 4.284$

(f) $3.45 \div 100 = 0.0345$

3. (a) 764 paise (b) 860 cm

(c) 60 mm (d) 3000 m

(e) 1240 paise (f) 8400 m

4. (a) $2.45 > 2.4$

(b) $64.3 < 64.33$

(c) $31.1 > 31.01$

(d) $64.6 = 64.60$

(e) $8.64 < 18.64$

(f) $7.8 = 7.80$

5. (a) Twelve rupees and sixty four paise

(b) One hundred twelve rupees and forty paise

(c) One hundred eight rupees and four paise

(d) One hundred rupees and sixty paise

(e) Forty two rupees and seventy six

(f) Seventy five rupees and five paise

6. (a) $42.6 = 40 + 2 + \frac{6}{10}$

(b) $7.08 = 7 + \frac{0}{10} + \frac{8}{100}$

(c) $706.03 = 700 + 00 + 6 + \frac{0}{10} + \frac{3}{10}$

(d) $51.80 = 50 + 1 + \frac{8}{10} + \frac{0}{100}$

(e) $42.7 = 40 + 2 + \frac{7}{10}$

(f) $7.86 = 7 + \frac{8}{10} + \frac{6}{100}$

7. (a) $\frac{19}{100} = 0.19$

(b) $\frac{4}{10} = 0.4$

(c) $\frac{20}{100} = 0.20$

8. (i) Cost of one math book + 2 comic books
$= 35.50 \times 1 + 25.6 \times 2$
$= 35.50 + 51.20 =$ ₹ 86.70

(ii) Cost of three adrentuse books
$=$ ₹ $89.90 \times 3 =$ ₹ 269.70

(iii) Cost of 2 story books and 2 poetry books
$= 69.55 \times 2 + 72.85 \times 2$
$= 139.10 + 145.70 =$ ₹ 284.80

(iv) Cost of 2 adventure books and story book
$= 89.90 \times 2 + 69.55 \times 1$
$= 179.80 + 69.55 =$ ₹ 249.35

(v) Cost of five comic book
$=$ ₹ $25.6 \times 5 =$ ₹ 128.0

(vi) Cost of three comic books and 4 poetry book
$=$ ₹ $25.6 \times 3 + 72.85 \times y$
$= 76.80 + 291.40 =$ ₹ 368.20

(vii) Cost of two adventure books and two poetry books
$= 89.90 \times 2 + 72.85 \times 2$
$= 179.80 + 145.70 =$ ₹ 325.50

9. (i) U.K

(ii) Japan

NCERT CORNER

Practice Time–1

1. Length of nail = 2 cm 9 mm Now, 10 mm = 1 cm

1 mm = 110 cm

9 mm = 0.9 cm

So, 2 cm 9 mm = 2.9 cm

2. Length of lady finger is 8 cm and 4 mm Now, 10 mm = 1 cm

1 mm = 110 cm

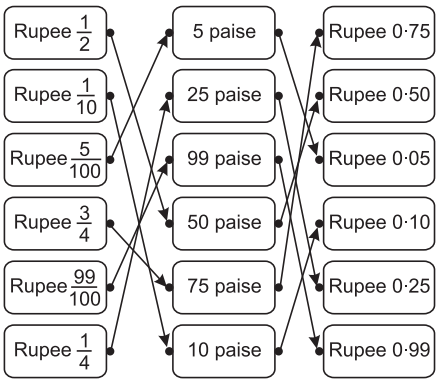
4 mm = 0.4 cm

So, 8 cm 4 mm = 8.4 cm

3. Using the scale on this page find the difference in length between candle 1 and candle 3.

Length of	Length in cm and mm	Length in cm
Candle 1	2 cm 9 mm	2.9 cm
Flame 1	1 cm 3 mm	1.3 cm
Candle 2	4 cm 9 mm	4.9 cm
Flame 2	1 cm 9 mm	1.9 cm
Candle 3	6 cm	6.0 cm
Flame 3	1 cm 9 mm	1.9 cm

Practice Time–2



Practice Time–3

1. (A) The money of England will cost the most in Indian Rupees as 1 pound is equal to Rs 77.76

(B) We find from the chart that, 1 US dollars = Rs 39.70 = 39 rupees 70 paise = 39 × 100 paise + 70 paise = 3900 paise + 70 paise 3970 paise 10 US dollars = 10 × 3970 paise = 39700 paise = Rs 397.00

So, Mithun got Rs 397.00 from his uncle as a gift.

Money spent on school trip by Mithun = Rs 350.00 So, money left with Mithun = Rs 397.00 – 350.00 = Rs 47.00

397.00 – 350.00 = 47.00

(C) Here, we are considering the exchange rates of Dirham in place of Saudi Riyal. Salary of Majeed's father = 1000 Dirham We find from the chart that, 1 Dirham = Rs 10.80 = 10 rupees 80 paise = 10 × 100 + 80 paise = 1000 + 80 paise = 1080 paise

So, 1000 Dirhams = 1000 × 1080 paise = 1080000 paise = Rs 10800

Therefore, salary of Majeed's father = Rs 10800.00

Salary of Arun's father= 2000 Sri Lankan Rupees We find from the chart that, 1 Sri Lankan Rupee = Re 0.37 = 37 paise

So, 2000 Sri Lankan Rupees = 2000 × 37 paise = 74000 paise = Rs 740.00

Therefore, salary of Arun's father = Rs 740

Thus, Majeed's father gets more salary in Indian Rupees than Arun's father.

(D) Price of present bought by Leena's aunty = 30 Yuan

We find from the chart that,

1 Yuan = Rs 5.50 = 5 rupees 50 paise = 5 × 100 + 50 paise = 500 + 50 paise = 550 paise

So, 30 Yuan-30 × 550 paise = 16500 paise = Rs 165

So, the cost of the gift in Indian Rupees is Rs 165.00

(E) (1) We find from the chart,

1 Won = Re 0.04 = 4 paise

We know that, Re 1 = 100 paise So, Rs 4 = 4 × 100 paise = 400 paise Rs 400 = 400 × 100 paise = 40000 paise

Now, 4 paise = 1 Won So, 400 paise = 400 ÷ 4 Won = 100 Won and 40000 paise = 40000 â€ ÷ 4 Won = 10000 Won Thus, Astha can change 100 Won for Rs 4, and 10000 Won for Rs 400.

(2) We find from the chart,

1 Hong Kong Dollar = Rs 5.10 = 5 rupees 10 paise = 5 × 100 + 10 paise = 500 + 10 paise = 510 paise

Total money with Astha = Rs 508 = 508 × 100 paise = 50800 paise

50800 paise = 50490 + 310 paise

50800 paise = 510 × 99 + 310 paise

50800 paise

= 510 HKD + 310 paise

Now,

310 paise = 300 paise + 10 paise

= 3 rupees and 10 paise

= Rs 3.10

Thus, Astha can change 99 HKD for Rs 508 and Rs 3.10 is left with her.

2.

Item	Quantity	Price (Rupees)
Soap	1	12.50
Green	1 kg	50.25
Gram Tea	250 gm	27.25
Coconut Oil	1 Litre	60.00
	Total	150.00

3. (1) Mumbai had the highest temperature i.e. 35.1°C at 3 pm. Srinagar was the coolest place with the temperature of 8.1°C at 3 pm.

(2) Temperature of Mumbai at 3 pm = 35.1°C temperature of Srinagar at 3 pm = 8.1°C Difference in temperature = 35.1°C – 8.1°C = 27°C

(3) Temperature of Thiruvanantha-puram at 3 pm = 33.5°C

Rise in the temperature needed to attain a temperature of 40°C = 40°C – 33.5°C = 6.5°C

(4) Temperature of Chennai at 3 pm = 29.9°C Temperature of Kolkata at 3 pm = 26.6°C Difference between temperature = 29.9°C – 26.6°C = 3.3°C

(5) (a) Temperature of Srinagar at 3 am = 1.3°C it will be very cold there.

(b) Temperature of Chennai at 3 pm = 29.9°C

Temperature of Chennai at 3 am = 21.1°C

Difference between temperature = 29.9°C – 21.1°C = 8.8°C

Temperature of Bhopal at 3 pm = 25.9°C

Temperature of Bhopal at 3 am = 9.8°C

Difference between temperature = 25.9°C – 9.8°C = 16.1°C

ATGRADE

1. (a) 1 m = 100 cm.

(b) 1 cm = 10 mm

2. 1 m 75 cm = 100 + 75 = 175 cm

3 m 55 cm = 300 + 55 = 355 cm

4 m 5 cm = 400 + 5 = 405 cm

3. A. 1. 1 centimetre is $\frac{1}{100}$ th part of one metre.

2. 75 centimetre is $\frac{75}{100}$ th part of one metre.

3. 5 centimetre is $\frac{5}{100}$ th part of one metre.

4. 2 millimetre is $\frac{2}{10}$ th part of one centimetre.

B. The height of Dinesh = 1 m 52 cm
= 152 cm

2 m = 200 cm $\Rightarrow$ 200 – 152 = 48 cm

Thus, Dinesh to grow to get a height of 2 m = 48 cm.

4. 3 mm = 0.3 cm

25 mm = 2.5 cm

105 mm = 10.5 cm

5. The length of candle 3 = 4.5 cm

The length of candle 1 = 2.5 cm

Difference = 4.5 – 2.5 = 2 cm

6. 99 paise = 0.99 rupees

75 paise = 0.75 rupees

2 rupees 50 paise = 2.50 rupees

7. The cost of a soap = ₹ 17.25

Arun has total of rupees

= ₹ 10 + ₹ 5 + ₹ 1 + ₹ 1 + ₹ 1 = ₹ 18

Arun got the money back

= ₹ 18 – ₹ 17.25 = ₹ 0.75

8. (a) Highest temperature = Chennai (22.3°C)

Lowest temperature = Srinagar = 1.7°C

Difference 22.3°C – 1.7°C = 20.6°C

(b) Temperature of Srinagar = 1.7°C

Temperature of Mumbai = 20°C

Difference = 20°C – 1.7°C

= 18.3°C is more.

9. (a)  This type of shaded part is $\frac{23}{100}$ th part of the whole picture.

(b)  This type of shaded part is $\frac{12}{100}$ th part of the whole picture.

(c)  This type of shaded part is $\frac{15}{100}$ th part of the whole picture.

(d)  This type of shaded part is $\frac{23}{100}$ th part of the whole picture.

(e) $\frac{27}{100}$ and 0.27 part is shaded by  this type.

10.

$\frac{1}{4}$ rupee	25 paise	0.25 rupee
$\frac{1}{20}$ rupee	5 paise	**0.05 rupee**
$\frac{3}{10}$ rupee	**30 paise**	0.30 rupee
$\frac{75}{100}$ rupee	**75 paise**	**0.75 rupee**
$\frac{7}{100}$ rupee	**7 paise**	**0.07 rupee**
$\frac{3}{5}$ rupee	**60 paise**	**0.6 rupee**

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11 Area and its Boundary

TIME TO PRACTICE

1. (i) Side of a square hall = 20 cm

$\because$ Area of square = side × side

= 20 × 20

= 400 cm^2

(ii) Length of the rectangular hall = 15 m

Breadth of the rectangular hall = 12 m

$\because$ Perimeter of rectnagle = 2(L + B)

Perimeter of Rectangle = 2 [15 m + 12 m]

= 2 × 27 m

= 54 m

(iii) Perimeter of square = 64 cm

$\because$ Perimeter of square = 4 × side

64 = 4 × side

$$\text{side} = \frac{64}{4} = 16 \text{ cm}$$

(iv) The area of a square field = 16 m^2

side × side = 16 m^2

$$\text{side} = \sqrt{16m^2}$$

= 4 m

Perimeter of a square field = 4 × side

= 4 × 4m

= 16 m

2. (i) Perimeter = 7 cm + 5 cm + 7 cm + 5 cm

= 24 cm

Area = 7 cm × 5 cm

= 35 cm^2

(ii) Perimeter = 2(Length + Breadh)

24 = 2(9 + B)

$$\frac{24}{2} = 9 + B$$

B = 12 – 9

B = 3 cm

Area = L × B

= 9 × 3

= 27 cm^2

(iii) Area = L × B

32 = L × 4

$$\frac{32}{4} = L$$

L = 8 cm

Perimeter = 2(L + B)

= 2(8 + 4)

= 24 cm

3. l = 16 cm, b = 12 cm

Perimeter = 2(l + b) = 2(16 + 12)

= 2 × 28 = 56 cm

Area = l × b = 16 × 12 = 192 cm^2

4. a = 15 cm

Perimeter = 4a = 4 × 15 = 60 cm

Area = a^2 = 15 × 15 = 15 = 225 cm^2

5. Perimeter = (8 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2) cm = 28 cm

Area = 7 × $(2)^2$ cm

= 28 cm^2

6. Perimeter = 2 + 2 + 2 + 2 + 3 + 7 + 8 + 3 + 2 + 8

= 39 cm

7. Area = 4 × 3 = 12; white wash = ₹ 15 × 12 = ₹ 180

8. Fencing Perimeter = 2(l + b) = 2(15 m + 12 m)

= 2 × 27 = 54 m

NCERT CORNER

Practice Time–1

1. (a) Length of kitchen = 220

Each side of tile = 10 cm

Number of tiles that can be placed along its length

$$= \frac{\text{Length of kitchen}}{\text{Length of each tile}} = \frac{220}{10} = 22$$

Breadth of kitchen = 180 cm

Length of each side of tile = 10 cm

Number of tiles that can be placed along its breadth

$$= \frac{\text{Breadth of kitchen}}{\text{Breadth of each tile}} = \frac{180}{10} = 18$$

Number of tiles that he will need for kitchen = 22 × 18 = 396

(b) Length of the fencing of square garden = 20 m

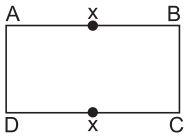
We know that a square has 4 sides and all its sides are equal.

So, length of each side of a square

$$= \frac{\text{Length of fencing of graden}}{\text{Number of sides of a square}}$$

$$= \frac{20}{4} = 5 \text{ cm}$$

(c)



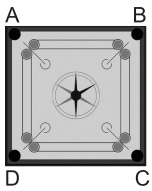
We know that a rectangle has two equal lengths and two equal widths. Now, width of a rectangle = BC = AD = 4 cm

Sum of the two widths of rectangle = 4 cm + 4 cm = 8 cm

Also, length of rectangle = AB = CD So, we get the remaining length of rectangle = 20 cm – 8 cm = 12 cm

Now, we know a rectangle has two lengths and they are equal. So, we divide it by 2 to get the length. Length of rectangle = $\frac{12}{2}$ cm = 6 cm

(d)



As the carrom board is square, so length of all its sides will be equal. Side = AB = BC = CD = AD

Therefore, its perimeter = sum of all its sides = 320 cm

Now, all the 4 sides are equal, so we divide 320 by 4. Thus, length of each side

$$= \frac{320}{4} \text{ cm} = 80 \text{ cm}$$

Now, area of a square carrom board = side × side = 80 cm × 80 cm = 6400 square cm

(e) Area of the design = 1 full square + 4 half squares

= (1 + 2) full squares

∴ = 3 full squares

= 3 × 1 square cm

= 3 square cm

Area of one tile = half of the cm square

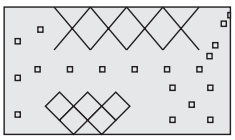
$$= \frac{1}{2} \text{ square cm}$$

$$\text{Number of tiles} = \frac{\text{Area of the design}}{\text{Area of one tile}}$$

$$= \frac{3}{\frac{1}{2}} = 3 \times \frac{2}{1} = 6$$

Own designs of area 4 and 6 square cm are shown :

Design of area 4 square cm and 6 square cm :



(f) Perimeter of Sanya's card = Sum of all its sides = 10 + 8 + 10 + 8 = 36 cm

Length of Manav's card = 11 cm

Perimeter of his card = 44 cm

We have to find the width of Manav's card.

Perimeter of card = Sum of all its sides = 11+11+ sum of 2 other sides = 22 + sum of 2 other sides

Now, sum of two other sides = 44 – 22 = 22 cm The two other sides of the greeting cards are width.

So, width of Manav's card = 22 ÷ 2 = 11 cm

Width of Aarushi's card = 8 cm Area of the card = 80 square cm

Now, we have to find length of the card.

Area of card = Length of card × 8 cm = 80 square cm So, on dividing the area of card by its width, we can get its length. Therefore, length of Aarushi's card = 80 ÷ 8 =10 cm.

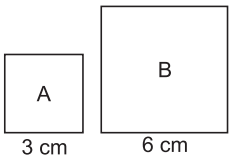
Whose card	Length	Width	Perimeter	Area
Sanya	10 cm	8 cm	36 cm	80 square cm
Manav	11 cm	11 cm	44 cm	121 square cm
Aarushi	10 cm	8 cm	36 cm	80 square cm
Kabir	10 cm	10 cm	40 cm	100 square cm

Practice Time–2

A.

	Square cm	Square metre	Square km
Handkerchief	✔		
Sari		✔	
Page of your book	✔		
School land			✔
Total land of a city			✔
Door of your classroom		✔	
Chair seat	✔		
Blackboard		✔	
Indian flag	✔		
Land over which a river			✔

B.



1. Each side of square A = 3 cm So, perimeter of square A = Sum of all its sides = 3 + 3 + 3 + 3 = 12 cm
2. Each side of square B = Double the side of square A So, side of square B = 2 × length of side of square A = 2 × 3 = 6 cm
3. Area of square B = 6 × 6 = 36 square cm
4. Area of square A = 3 × 3 = 9 square cm So, area of square B is 4 times the area of square A.
5. Perimeter of square B = Sum of all its sides = 6 + 6 + 6 + 6 = 24 cm
6. Perimeter of square B is 2 times the perimeter of square A.

ATGRADE

1. (a) Perimeter of shape A = 2(length + breadth)

= 2 (5 + 6) = 22 cm

Perimeter of shape B = 2 (11 + 3)

= 28 cm

Thus, shape B has bigger perimeter than shape A.

Difference = 28 – 22 = 6 cm

Hence, perimeter of shape B is 6 cm bigger than that of shape B.

(b) Area of shape A = length × breadth

= 6 × 5 = 30 cm^2

Area of shape B = 11 × 3 = 33 cm^2

Difference = 33 – 30 = 3 cm^2

Hence, area of shape A is 3 cm^2 smaller than that of shape B.

2. (a) All sides are equal of a square.
The length of a fence is 32 m, then the length of one side = $\frac{32}{4}$ = 8 m

(b) The perimeter of rectangle = 2 (length + breadth)

$\Rightarrow$ $24 = 2(x + 5)$

$\Rightarrow$ $24 = 2x + 10$

$\Rightarrow$ $2x = 14$

$\Rightarrow$ $x = \frac{14}{2} = 7$ cm

3. Area of a room = 200 cm × 160 cm
= 32000 cm^2
Area of a tile = 20 cm × 20 cm
= 400 cm^2

$$\text{No. of tiles} = \frac{\text{Area of a room}}{\text{Area of a tile}}$$

$$= \frac{32000}{400} = 80$$

4. Area of a square = side × side

$\Rightarrow$ 400 cm^2 = $side^2$

$\Rightarrow$ side = 20 cm

Perimeter of square = 4 × side
= 4 × 20 = 80 cm

5. The area of I rectangle = 40 m × 10 m
= 400 m^2

The area of II rectangle = 30 m × 20 m
= 600 m^2

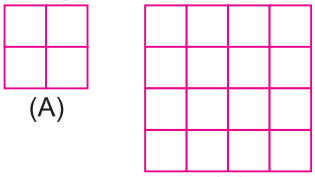
Hence, the area of II rectangle will be larger.

6. Perimeter of a card = 2 ($l + b$)
= 2 (14 + 9)
= 2 × 23 = 46 cm
And area of a card = $l + b$ = 14 × 9
= 126 cm^2

7. Area of rectangle = $l \times b$ = 12 × 8
= 96 cm^2
Area of a postage stamp = 4 cm^2
Required postage stamps to cover the whole rectangle = $\frac{96}{4}$ = 24

8. Perimeter of a square = 24 cm
Side of a square = $\frac{24}{4}$ = 6 cm
Side of the square when it increased by 2 cm
= 6 + 2 = 8 cm
New perimeter = 4 × 8 = 32 cm

9.



(A) (B)

(a) Breadth of square B is 4 cm.
(b) The area of square A is 4 cm^2.
(c) Perimeter of square B = 4 × 4 = 16 cm
(d) Perimeter of square A = 2 × 4 = 8 cm
Perimeter of square B = 4 × 4 = 16 cm
Difference = 16 – 8 = 8 cm
(e) Area of square A = 4 cm^2
Area of square B = 16 cm^2
Difference = 16 – 4 = 12 cm^2

10.

Whose card	Length	Width	Perim-eter	Area
Sanya	12 cm	6 cm	**36 cm**	**72 cm^2**
Aarushi	15 cm	**15 cm**	60 cm	**255 cm^2**
Manav	**12 cm**	8 cm	**40 cm**	96 cm^2
Kabir	**12 cm**	**12 cm**	48 cm	144 cm^2

❑❑

12 Smart Charts

TIME TO PRACTICE

1. 17, 11, 23, 29

2. (i) 4

(ii) 50 – 37 = 13

(iii) 50 – 39 = 11

(iv) 9 + 50 + 37 + 96 + 39 = 231

3. (i) Sunday

(ii) Saturday

(iii) 1400

(iv) 350

(v) 150

(vi) 550

4. (i) Walking

(ii) Other

(iii) Swimming

(iv) Walking

(v) Cycling

5.

Day	No. of trees planted
Monday	⊠ ⊠ ⊠
Tuesday	⊠ ⊠ ⊠ ⊓
Wednesday	⊠ ⊠ ⊠ ⊠ ⊠ ⊓
Thursday	⊠ ⊠ ⌜
Friday	⊠ ⊠ ⊠ □

6. (i) green

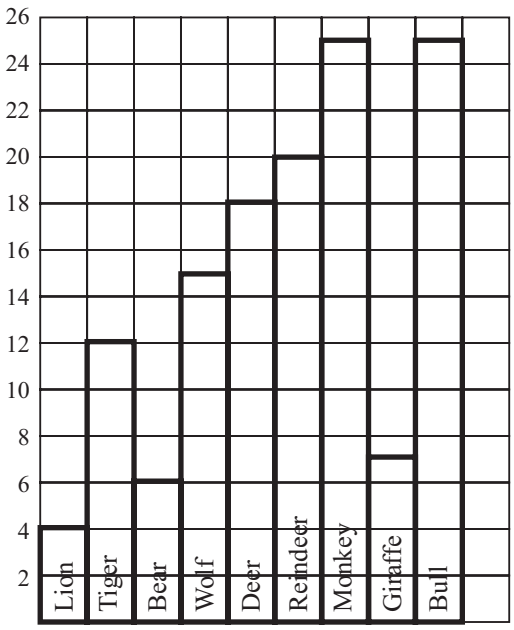
(ii) Red

(iii) 12

(iv) 18 – 6 = 12

(v) 6 + 10 + 18 + 12 = 46

7.



8. (i) class 3 and 4

(ii) class 8

(iii) class 2

(iv) 85 – 40 = 45

(v) 80 + 60 = 140

NCERT CORNER

Practice Time–After school

1.

What they like to do after school	Number of children
Watching TV	2
Playing football	3
Reading story books	1
Listening Music	2
Sleeping	1
Drawing	1

Disclaimer : The answer may vary from student to student. The answers provided here are only for reference.

ATGRADE

1. (a) The number of each vehicle in the table :

	Tally Marks	No.
Cycle	𝍸 𝍸 𝍸 𝍸 𝍸 ⌐	28
Car	𝍸 𝍸 ⌐	12
Auto-rickshaw	𝍸 𝍸 𝍸 ⌐	18
Bus	𝍸 𝍸 𝍸	15
Cycle rickshaw	𝍸 𝍸 𝍸 □	19
Truck	𝍸 |	6
	Total	**96**

(b) Number of vehicles seen by Sumita in half an hour is 103.

(c) True.

(d) 7 more buses : 𝍸 ⌐ ;

2 more trucks : ⌐

Helping Hands

2. Total children who said they help their parents = 100

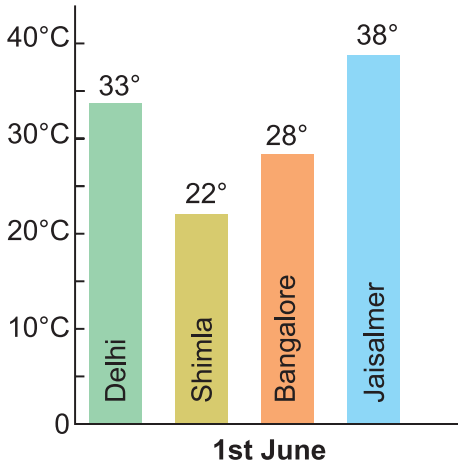
3.

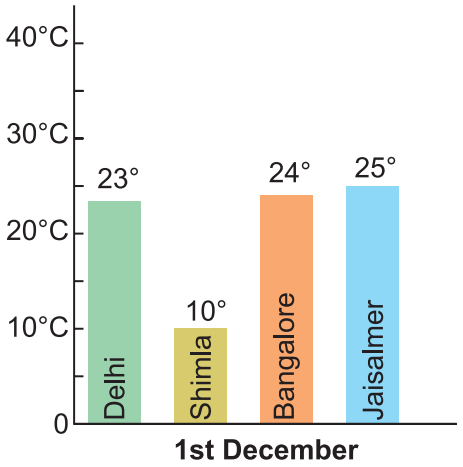
What they like to do after school	Number of children
Watching TV	3
Playing football	2
Reading story books	1
Doing homework	1
Sleeping	1
Cycling	2
Total	**10**

Hot and Cold

4. 1. Jaisalmer.

2. Shimla.





3. Bangalore city shows the lowest change in temperature

28°C – 24°C = 4°C

Rabbits in Australia

5. 1. (a) A little less than double the number of rabbits in the last year.

2. 400

3. After 1788 and after 8 years the number of rabbits crossed 1000.

❑❑

13 Ways to Multiply and Divide

TIME TO PRACTICE

1. (i)
	56	×	39
	50		6
30	1500		180
9	450		54

$56 \times 39 = 2184$

(ii)
	75	×	43
	70		5
40	2800		200
3	210		15

$75 \times 43 = 3225$

2. (i)
$$\begin{array}{r} 89 \\ \times 74 \\ \hline 356 \\ 623\times \\ \hline 6586 \end{array}$$

(ii)
$$\begin{array}{r} 83 \\ \times 67 \\ \hline 581 \\ 498\times \\ \hline 5561 \end{array}$$

(iii)
$$\begin{array}{r} 75 \\ \times 38 \\ \hline 600 \\ 225\times \\ \hline 2850 \end{array}$$

(iv)
$$\begin{array}{r} 57 \\ \times 28 \\ \hline 456 \\ 114\times \\ \hline 1596 \end{array}$$

(v)
$$\begin{array}{r} 69 \\ \times 28 \\ \hline 552 \\ 138\times \\ \hline 1932 \end{array}$$

(vi)
$$\begin{array}{r} 70 \\ \times 22 \\ \hline 140 \\ 140\times \\ \hline 1540 \end{array}$$

3. (i) $13)1079(83$

$$\begin{array}{r} 104 \\ \hline \times 39 \\ 39 \\ \hline \times\times \end{array}$$

Check
$$\begin{array}{r} 83 \\ \times 13 \\ \hline 249 \\ 83\times \\ \hline 1079 \end{array}$$

(ii) $18)414(23$

$$\begin{array}{r} 36 \\ \hline \times 54 \\ 54 \\ \hline \times\times \end{array}$$

Check
$$\begin{array}{r} 23 \\ \times 18 \\ \hline 184 \\ 23\times \\ \hline 414 \end{array}$$

(iii) $15)3900(260$

$$\begin{array}{r} 30 \\ \hline \times 90 \\ 90 \\ \hline \times\times \end{array}$$

Check
$$\begin{array}{r} 260 \\ \times 15 \\ \hline 1300 \\ 260\times \\ \hline 3900 \end{array}$$

(iv) $19)513(27$

$$\begin{array}{r} 38 \\ \hline 138 \\ 133 \\ \hline \times\times \end{array}$$

Check
$$\begin{array}{r} 27 \\ \times 19 \\ \hline 243 \\ 27\times \\ \hline 513 \end{array}$$

(v) $16)1312(82$

$$\begin{array}{r} 128 \\ \hline 32 \\ 32 \\ \hline \times\times \end{array}$$

Check
$$\begin{array}{r} 82 \\ \times 16 \\ \hline 492 \\ 82\times \\ \hline 1312 \end{array}$$

4. (i) > (ii) < (iii) =
(iv) > (v) < (vi) >

5. (i) + (ii) × (iii) ÷
(iv) ÷ (v) – (vi) ÷

6. (i) Raju earn in 1 year = 365×365

$$\begin{array}{r} 365 \\ \times\ 365 \\ \hline 1825 \\ 2190 \\ 1095 \\ \hline 133225 \end{array}$$

= ₹ 133225

(ii) Nihal earns in a week (7 days)
$= 425 \times 7 =$ ₹ 2975

(iii) Khan earns in a math (30 days)
$= 319 \times 30 =$ ₹ 9570

(iv) Dharma earns in two months (60 days)
$= 157 \times 60 =$ ₹ 9420

(v) $425 \times 30 - 319 \times 30$
$= (425 - 319) \times 30 = 106 \times 30 =$ ₹ 3180

(vi) $365 \times 365 - 216 \times 365$
$= (365 - 216) \times 365$
$= 149 \times 365$
= ₹ 54385

$$\begin{array}{r} 365 \\ \times\ 149 \\ \hline 3285 \\ 1460 \\ 365 \\ \hline 54385 \end{array}$$

= ₹ 54385

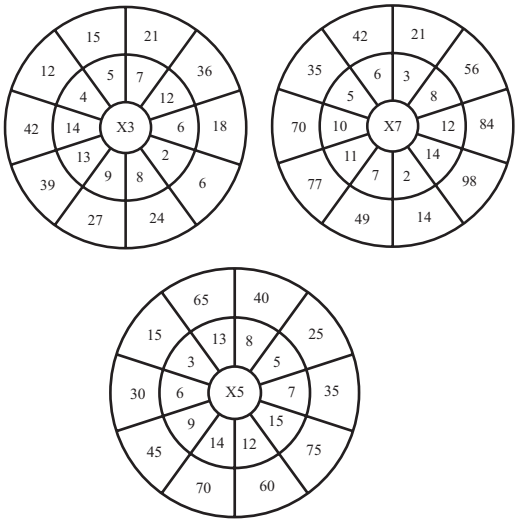
7. (i)

$$\begin{array}{rcl} a\ a & & 2\ 2 \\ \times\ a\ a & & \times\ 2\ 2 \\ \hline b\ b & = & 4\ 4 \\ +b\ b\times & & +4\ 4\times \\ \hline b\ c\ b & & 4\ 8\ 4 \end{array} \qquad \begin{array}{l} a = 2 \\ b = 4 \\ c = 8 \end{array}$$

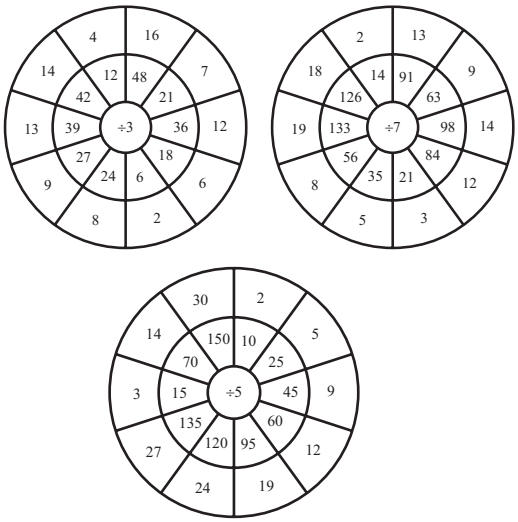
(ii)

$$\begin{array}{rcl} x\ x & & a\ a \\ \times x\ x & & \times a\ a \\ \hline x\ x & = & a\ a \\ x\ x\times & & a\ a\times \\ \hline x\ y\ x & & a2aa \end{array} \qquad \begin{array}{l} x = a \\ y = ? \end{array}$$

8.



9.



10. (i) ∵ Ravi studies in 1 day = 12 hours

∴ Ravi studies in 1 month or 30 days

= 12 × 30 = 360 hours

(ii) Cost of one chair = ₹ 265

Cost of 52 chairs = ₹ 265 × 52

$$\begin{array}{r} 265 \\ \times 52 \text{ chairs} \\ \hline 530 \\ 1325 \\ \hline ₹\,13780 \end{array}$$

(iii) Number of cakes sold by the bakery everyday = 315

Number of cakes sold in 36 days

= 315 × 36

$$\begin{array}{r} 315 \text{ cakes} \\ \times 36 \text{ days} \\ \hline 1890 \\ 945 \\ \hline 11340 \text{ cakes} \end{array}$$

(iv) Number of sofas sold by Nova everyday

= 765

Number of sofas sold in 7 day or a week

= 765 × 7

$$\begin{array}{r} 765 \text{ sofas} \\ \times 7 \text{ days} \\ \hline 5355 \text{ sofas} \end{array}$$

(v) Number of fruits distributed equally among 305 student = 7560

Number of fruit of fruits left :

$$\begin{array}{l} 305)7560(24 \\ \quad 610 \\ \quad \overline{1460} \\ \quad 1220 \\ \quad \overline{240} \end{array}$$

24 fruits remaininge 240

(vi) Number objects contained by 17 cartoons

= 3519

No. of objects distributed in each cartoon

= 3519 ÷ 17

$$\begin{array}{l} 17)3519(27 \\ \quad 34 \\ \quad \overline{119} \\ \quad 119 \\ \quad \overline{\times\times\times} \end{array}$$

27 objects

NCERT CORNER

Practice Time–1

1. (a)
```
    3 2
  × 4 6
-------
    1 9 2   (32×6)
+ 1 2 8 0   (32×40)
-------
  1 4 7 2
-------
```

(b)
```
    6 7
  × 1 8
-------
    5 3 6   (67×8)
+ 6 7 0     (67×10)
-------
  1 2 0 6
-------
```

2. (a)
```
    4 7
  × 1 9
-------
    4 2 3   (47×9)
+ 4 7 0     (47×10)
-------
    8 9 3
-------
```

(b)
```
      1 8 8
    × 9 1
---------
      1 8 8     (188×1)
+ 1 6 9 2 0     (188×90)
---------
  1 7 1 0 8
---------
```

(c)
```
    6 3
  × 5 7
-------
    4 4 1   (63×7)
+ 3 1 5 0   (63×50)
-------
  3 5 9 1
-------
```

(d)
```
    2 2 5
  × 2 2
-------
    4 5 0   (225×2)
+ 4 5 0 0   (225×20)
-------
  4 9 5 0
-------
```

(e)
```
    3 6 0
  × 1 2
-------
    7 2 0   (360×2)
+ 3 6 0 0   (360×10)
-------
  4 3 2 0
-------
```

(f)
```
    1 6 3
  × 4 2
-------
    3 2 6   (163×2)
+ 6 5 2 0   (163×40)
-------
  6 8 4 6
-------
```

Practice Time–2

(a) He will earn in 52 days ₹ 98 per day = 98 × 52 = ₹ 5096

(b) He will pay in 2 years ₹ 2750 per month = 24 × 2750 = ₹ 66000

(c) Total cost of milk selling per day
= 23 × 13 = ₹ 299

(d) Total earning in a month
= 11 × 210 = ₹ 2310

(e) Total cost
= 12 × 240 = ₹ 2880

Practice Time–3

1. (a)
```
4 ) 4228 (1057
  – 4
  ---
    22
  – 20
  ---
    28
  – 28
  ---
    ×
```

(b)
```
22 )  770 ( 35
   – 66
   ----
    110
  – 110
  -----
      ×
```

(c)
```
8 ) 9872 ( 1234
  – 8
  ---
   18
  – 16
  ----
    27
  – 24
  ----
     32
   – 32
   ----
      ×
```

(d)
```
21 ) 672 ( 32
   63
   --
   42
   42
   --
    ×
```

(e)
```
7 ) 772 ( 11
  – 7
  ---
    7
  – 7
  ---
    2
```

(f) 13) 639 (47
– 52
119
– 117
2

Practice Time–4

1. Number of boxes = 576 ÷ 24
= 24 boxes

2. Number of people = 836 ÷ 44
= 19 boxes

3. Number of rows = 458 ÷ 15 = 30 Rows 8 trees left over

Make the Best Story Problem

1. (b) Option (a) is not a good choice because the price is not given in the story.
Option (c) is not good choice because the total number of boxes is given in the story.

2. (b) Option (a) is not a good choice becuase the number of children for each tent is already given.
Option (c) is not a good choice because the number of children is already given.

3. (c) Option (a) is not a good choice because the total number of eggs is already given.

4. (b) Option (b) is not a good choice because there is no data on the number of fresh or spoiled eggs.

Practice Time–5

1. (a) 9) 438 (48
– 36
78
– 72
6

Check

438 = 9 × 48 + 6 = 432 + 6
= 438 **verified**

(b) 12) 3480 (290
– 24
108
– 108
0

Check

3480 = 12 × 290
= 3480 **verified**

(c) 7) 450 (64
– 42
30
– 28
2

Check

450 = 7 × 64 + 2 = 450 **verified**

(d) 10) 900 (9
– 90
0 0
– 0
×

Check

900 = 10 × 90 **verified**

(e) 6) 678 (113
– 6
07
– 6
18
– 18
×

Check

678 = 6 × 113 **verified**

(f) 2475 ÷ 11
11) 2475 (225
22
27
22
55
– 55
0

Check

2475 = 225 × 11 **verified**

2. $21 \times 16 = 336$ $15 \times 7 = 105$ $93 \times 2 = 186$ $17 \times 5 = 85$ $10 \times 10 = 100$
$26 \times 26 = 676$ $77 \times 10 = 770$ $50 \times 10 = 500$ $11 \times 11 = 121$ $59 \times 7 = 413$
$85 \times 30 = 2550$ $64 \times 42 = 2688$ $3200 \div 40 = 80$ $19 \times 3 = 57$ $248 \div 8 = 31$
$432 \div 18 = 24$ $729 \div 9 = 81$ $825 \div 5 = 165$ $221 \div 13 = 17$ $576 \div 12 = 48$
$228 \div 4 = 72$ $869 \div 11 = 79$ $847 \div 7 = 121$ $981 \div 3 = 327$ $475 \div 19 = 25$
$31 \times 19 = 589$

545	110	434	642	709	623	919	341	12	168
984	16	561	608	236	413	529	62	259	905
709	907	367	632	336	121	492	178	431	25
166	806	584	186	100	589	72	717	248	676
624	82	105	24	165	17	85	770	327	500
247	997	485	2688	81	80	48	901	126	121
742	427	756	531	79	2550	337	1001	314	57
945	1000	687	584	1200	31	124	3126	978	53
109	799	845	1999	864	955	123	1234	678	56
549	459	614	1864	834	559	900	1111	268	171

ATGRADE

1. (a)
$$\begin{array}{r} 75 \\ \times\ 35 \\ \hline 375 \\ 225\times \\ \hline 2625 \end{array}$$

(b)
$$\begin{array}{r} 275 \\ \times\ 42 \\ \hline 550 \\ 1100\times \\ \hline 11550 \end{array}$$

2. Sohan drinks 12 glasses of water everyday.
He will drink glasses of water in one year = $365 \times 12 = 4380$
So, he will drink 4380 glasses of water in one year.

3. (a) Anita's heart beat in one minute
= 71 times
Total minutes in two days = $24 \times 60 \times 2$
= 2880 minutes
Heart will beat in two days = 2880×71
= 204480 times

(b) Total days in the month of January = 31
Total hours = $31 \times 24 = 744$ hours
Total minutes = $744 \times 60 = 44640$
So, the heart will beat in the month of January = 44640×71
= 3169440 times

4.
$$\begin{array}{r|l} 5 & 967 \\ -5\downarrow & \\ \hline & 46 \\ -45 & \\ \hline & 17 \\ -15 & \\ \hline & 2 \end{array} \quad 193$$

Hence, quotient = 193 and remainder = 2

5. Cost of 1 litre milk = ₹ 56
Total income of a month = 56×210
= ₹ 11760

6. Total amount Isha have = ₹ 1200
Rate of one litre petrol = ₹ 108
She can buy petrol = $\frac{1200}{108}$
= 11.11 litre

7. Wages of one day ₹ 300
Wages of 25 days = 300×25 = ₹ 7500

8. 28 laddus are made from 1 kg flour
Laddus will be made from 15 kg flour
= $28 \times 15 = 420$ laddus
Number of laddus in one box = 14
Boxes will be required to pack all laddus = $420 \div 14 = 30$ boxes

9. (a) Total days in two weeks = 14
Wages of one day in Raisen = ₹ 150
Total wages of Farhan = 14 × 150
= ₹ 2100

(b) Total days in March = 31
Wages of one day in Bhopal = ₹ 225
Total wages of Kamla = 31 × 225
= ₹ 6975

(c) Highest wages = ₹ 225
Lowest wages = ₹ 150
Difference = 225 – 150 = ₹ 75

10. Capacity of one tank = 200 litre
Capacity of 30 tanks = 30 × 200
= 6000 litre
Number of buckets that can be filled with water from one tank = 20 buckets
Number of buckets that can be filled with water from 30 tanks = 20 × 30
= 600 buckets

❑❑

14 How Big ? How Heavy ?

TIME TO PRACTICE

1. (i) kg (ii) litre (iii) volume
(iv) 125 cm^3 (v) 3 cm

2. (i) 2
(ii) 40 ml
(iii) 25 ml
(iv) 6
(v) 60 ml

3. A coin weight = 20 gm
2000 coins weight = 20 × 2000
= 40000 gm = 40 kg

4. One cube weight = 50 gm
(i) 100 gm
(ii) 200 gm
(iii) 300 gm

5. The weight of 1 marble = 12 gm
(i) 12 × 5 = 60 gm
(ii) 12 × 7 = 84 gm
(iii) 12 × 11 = 132 gm
(iv) 12 × 15 = 180 gm

6. (i) The edge of the cube noddy (a) = 6 cm
The volume of the cube noddy.
$(V) = a^3 = 216$ cm^3
(ii) $V = 18^3 = 5832$ cm^3
(iii) Total $V = 6048$ cm^3

7. $V = l \times b \times h = 15 \times 4 \times 5 = 300$ cm^3
$V = a^3 = 5 \times 5 \times 5 = 125$ cm^3

8. (i) $v = 528$ cm^3
(ii) $v = l \times b \times h =$
$6 \times 11 \times h = 528$
$\therefore \quad h = \frac{528}{6 \times 11} = 8$ cm

9. Volume of a cubical box = 125 m^3
length of edge = $\sqrt[3]{125}$
$= \sqrt[3]{5^3} = 5$ m

10. Colume of 1st cuboidal box
$V_1 = l \times b \times h$
$= 16 \times 11 \times 12 = 2112$ cm^3
$V_2 = 18 \times 12 \times 14 = 3024$ cm^3
left unfilled = 3024 – 2112 = 912 cm^3

11. Weight of one white ball = 4 gm
Weight of one blue ball = 6 gm
Weight of one green ball = 9 gm

(i) Total weight of the 2 white balls and 1 blue ball
= 2 × 4 gm + 1 × 6 gm
= 14 gm

(ii) Total weight of the 3 blue balls and 2 green balls
= 3 × 6 gm + 2 × 9 gm
= 18 gm + 18 gm
= 36 gm

(iii) Total weight of the 3 green balls and 3 white balls
= 3 × 9 gm + 3 × 4 gm
= 27gm + 12 gm
= 39 gm

(iv) Total weight of the 15 white balls and 17 blue balls
= 15 × 4 gm + 17 × 6 gm
= 60 gm + 102 gm
= 162 gm

(v) Total weight of the 4 white balls, 5 blue balls and 11 green ball
= 4 × 4 gm + 5 × 6 gm + 11 × 9 gm
= 16 gm + 30 gm + 99 gm
= 145 gm

12. (i) $\frac{1000}{5}$ gm = 200 gm

(ii) $\frac{200}{5}$ gm = 40 gm

(iii) $\frac{2.5}{5}$ gm = 0.5 kg = 500 gm

(iv) $\frac{250}{5}$ gm = 50 ml

(v) $\frac{200}{5}$ gm = 40 gm

NCERT CORNER

Practice Time–1

1. Volume of 1 Math-Magic book = 540 cm cubes. 5 Math-Magic books are used to make the stage. So, volume of the stage = Volume of 5 such Math-Magic books = 5 × 540 cm cubes = 2700 cm cubes

2. ❙ A matchbox is about 13.5 cm cubes.
❙ A geometry box is about 157.5 cm cubes.
❙ An eraser is about 1.5 cm cubes.

We will multiply the length, breadth and height of the object to cross- check our guess.

Practice Time–2

1. ❙ In the bottom layer, we can see that there are 4 matchboxes in length and 4 in breadth. So, the bottom layer has 16 match boxes.

In the layer above the bottom, we can see that there are 3 matchboxes in length and 3 in breadth. So, the layer above bottom has 9 matchboxes. Now, the second layer from the top has 2 matchboxes in length and 2 matchboxes in breadth. So, this layer has 4 matchboxes.

The top layer has only 1 matchbox. Thus, total volume of the arrangement in terms of matchboxes = 16 + 9 + 4 + 1 = 30

Disclaimer : The answer may vary from student to student, based on his/her observation. It is highly recommended that the student prepare the answer on their own.

Appendix : Alternation Methods of Mathematics

Practice Time–1

1. 12 × 22
1 × 2 | 2 × 1 + 2 × 2 | 4
= 2| 2 + 4 | 4
= 2| 6| 4
= 264 **verified**

2. 32 × 21
6 | 3 + 4 | 2
= 6| 7| 2
= 672 **verified**

3. 61 × 21
12| 6 + 2 | 1
= 12| 8 | 1
= 1281 **verified**

4. 43 × 42
16| 8 + 2| 6
= 16 | 20 | 6
= 1806 **verified**

5. 45 × 85
12| 20 + 40| 25
= 12| 60 | 25
= 18| 0 | 5
= 1805 **verified**

6. 88 × 22
16 | 16 + 16 | 16
= 16 | 32 | 16
= 1936 **verified**

7. 122 × 211

2| 4 + 1| 1 + 2 + 4| 2 + 2| 2

= 2| 5 | 7 | 4 | 2

= 25742 **verified**

8. 121 × 212

2| 5 | 6 | 5 | 2

= 25652 **verified**

9. 322 × 211

6| 7| 9| 4| 2

= 67942 **verified**

10. 511 × 224

10| 12| 24| 6| 4

= 11| 4| 4| 6| 4

= 114464 **verified**

11. 333 × 222

6| 12| 18| 12| 6

= 7| 3| 9| 2| 6

= 73926 **verified**

12. 555 × 55

25| 50| 75| 50| 25

= 25| 50| 75| 52| 5

= 25| 50| 80| 2| 5

= 25| 58| 0| 2| 5

= 30| 8| 0| 2| 5

= 308025 **verified**

Practice Time–2

1. 9) 72 (8

– 72

×

Check

72 = 9 × 8 **verified**

2. 5) 180 (36

– 15

30

– 30

×

Check

180 = 36 × 5 **verified**

3. 20) 5240 (262

– 40

124

– 120

40

– 40

×

Check

5240 = 262 × 20 **verified**

4. 23) 2395 (104

– 23

95

– 92

3

Check

2395 = 104 × 23 + 3

= 2392 + 3 = 2395 **verified**

5. 12) 1239 (103

– 12

39

– 36

3

Check

1239 = 103 × 12 + 3

= 1| 2 | 3| 6 + 3

= 1236 + 3

= 1239 **verified**

6. 89) 4150 (46

– 356

590

– 534

56

Check

4150 = 46 × 89 + 56

= 4094 + 56 = 4150 **verified**

ATGRADE

1. 1. Equal to 20 marbles.
2. Equal to 3 marbles.
3. Equal to 4 marbles.
4. Equal to 5 marbles.
5. Equal to 10 marbles.

2. Do yourself.

3.

Name of the thing	Its volume (nearly how many marbles?)
A ball	20 marbles
A stone	5 marbles
A mobile	25 marbles
A bowl	15 marbles
A plate	100 marbles

4.

Thing	Volume (in mL)
A ball	50 mL
A stone	100 mL
A scissor	60 mL

5. My matchbox is 3 cm wide.
It is 5 cm long.
It is 1 cm high.

6. 1. I think Ganesh is right.
2. Ganesh and Dinga will fit the cubes in the first layer before packing. This will find the number of layers to fill the cubes.

Find out Ganesh's Method

1. $11 \times 11 = 121$
Such ten layers, so $121 \times 10 = 1210$ cubes.
2. $15 \times 9 = 135$
$135 \times 10 = 1350$ cubes
3. Total cubes in all the three boxes
$= 1200 + 1210 + 1350$
$= 3760$ cubes

7. 1. If my weight is 31 kg, then 160 such children together will be equal to the weight of an elephant of 5000 kg.
$5000 \div 31 = 161$

2. Weight of a baby elephant at birth
$= 90$ kg
My weight at the time of birth = 3 kg
So, a baby elephant was $90 \div 3 = 30$ times heavier than me at birth.

3. Weight of food eaten by a grown elephant in 1 day = 136 kg
Weight of food eaten by a grown elephant in 1 month, i.e., (30 months)
$= 136 \times 30 = 4080$ kg
Weight of food eaten by a grown elephant in a year, i.e., (12 months)
$= 4080 \times 12$
$= 48960$ kg

8. (a) 1 kg = 1000 g
18 kg = 18000 g
If one coin weighs 9 g, then 18000 g weighs has
$= 18000 \div 9 = 2000$ coins

(b) 1 kg = 1000 g
54 kg = 54000 g
If one coin weighs 9 g, then 54000 g weighs has
$$= \frac{54000}{9} = 6000 \text{ coins}$$

(c) If one coin weighs 9 g, then 4500 g weighs has
$$= \frac{4500}{9} = 500 \text{ coins}$$

(d) 2 kg and 250 g = 2 × 1000 g + 250 g
$= 2000$ g + 250 g
$= 2250$ g
If one coin weighs 9 g, then 2250 g weighs has
$$= \frac{2250}{9} = 250 \text{ coins}$$

(e) 1 kg and 125 g = 1000 g 125 g
$= 1125$ g
If one coin weighs 9 g, then 1125 g weighs has
$$= \frac{1125}{9} = 125 \text{ coins}$$

9. (a) The weight of a ₹ 2 coin = 6 g

The weight of 2200 coins = 2200 × 6

= 13200 g

= 13 kg 200 g

(b) The weight of a ₹ 2 coin = 6 g

The weight of 3000 coins = 3000 × 6

= 18000

= 18 kg 0 g

10. 100 one rupee coin weigh = 485 g

The weight of one coin = 485 ÷ 100

Weight of 10000 coins

= (485 ÷ 100) × 10000

= 485 × 10000

= 48500

= 48 kg 500 g

❑❑