DELHI PUBLIC SCHOOL, GANDHINAGAR

CLASS: 5 **SUBJECT: MATHS**

Academic Session 2021-22

CHAPTER- 10

Perimeter, Area and Volume

EXERCISE 1

Q.1 Find the perimeter using the formula.

a)

Perimeter of rectangle = 2 × (l + b)

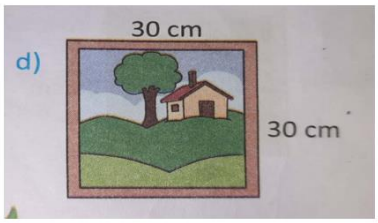
Here, l = 40 cm and b = 15 cm

Perimeter of keyboard = 2 × (40 + 15) cm

= 2 × 55 cm

= 110 cm

d)

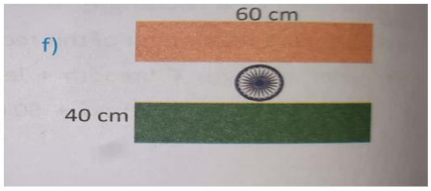


Perimeter of square = 4 × side

Here, side = 30 cm

Perimeter of painting = 4 × 30 cm

= 120 cm



Perimeter of rectangle = 2 × (l + b)

Here, l = 60 cm and b = 40 cm

Perimeter of keyboard = 2 × (60 + 40) cm

= 2 × 100 cm

= 200 cm

Q.3 Find the perimeter of squares with sides of the following length.

a) 4 cm

Perimeter of square = 4 × side

= 4 × 4 cm

= 16 cm

f) 35 cm

Perimeter of square = 4 × side

= 4 × 35 cm

= 140 cm

H.W.- (g) 51 cm

Q.2 Find the perimeter of the rectangles using the formula.

a) l = 4 cm, b = 9 cm

Perimeter of rectangle $= 2 \times (l + b)$

$= 2 \times (4 + 9)$ cm

$= 2 \times 13$ cm

$= 26$ cm

e) l = 5.5 cm, b = 5.1 cm

Perimeter of rectangle $= 2 \times (l + b)$

$= 2 \times (5.5 + 5.1)$ cm

$= 2 \times 10.6$ cm

$= 21.2$ cm

		1	
	1	0.	6
	X		2
	2	1.	2

Q.4 Find the length of the sides of the sides of squares with the following perimeter.

a) 32 cm

Length of each side of square = 32 cm ÷ 4

= 8 cm

d) 108 cm

Length of each side of square = 108 cm ÷ 4

= 27 cm

f) 200 cm

Length of each side of square = 200 cm ÷ 4

= 50 cm

Q.5 Applying perimeter measures (story sums)

c) Every day Dadaji walks 8 times around a rectangular park of length 100 m and breadth 75m. What distance does he walk every day?

Solution:

Length of rectangular park = 100 m

Breadth of rectangular park = 75m

Perimeter of rectangular park = $2 \times (l + b)$

$= 2 \times (100 \text{ m} + 75 \text{ m})$

$= 2 \times (175 \text{ m})$

$= 350 \text{ m}$

Q.5 Applying perimeter measures (story sums)
c) Every day Dadaji walks 8 times around a rectangular park of length 100 m and breadth 75m. What distance does he walk every day?

Solution:

Length of rectangular park = 100 m

Breadth of rectangular park = 75m

Perimeter of rectangular park = $2 \times (l + b)$

$= 2 \times (100 \text{ m} + 75 \text{ m})$

$= 2 \times (175 \text{ m})$

$= 350 \text{ m}$

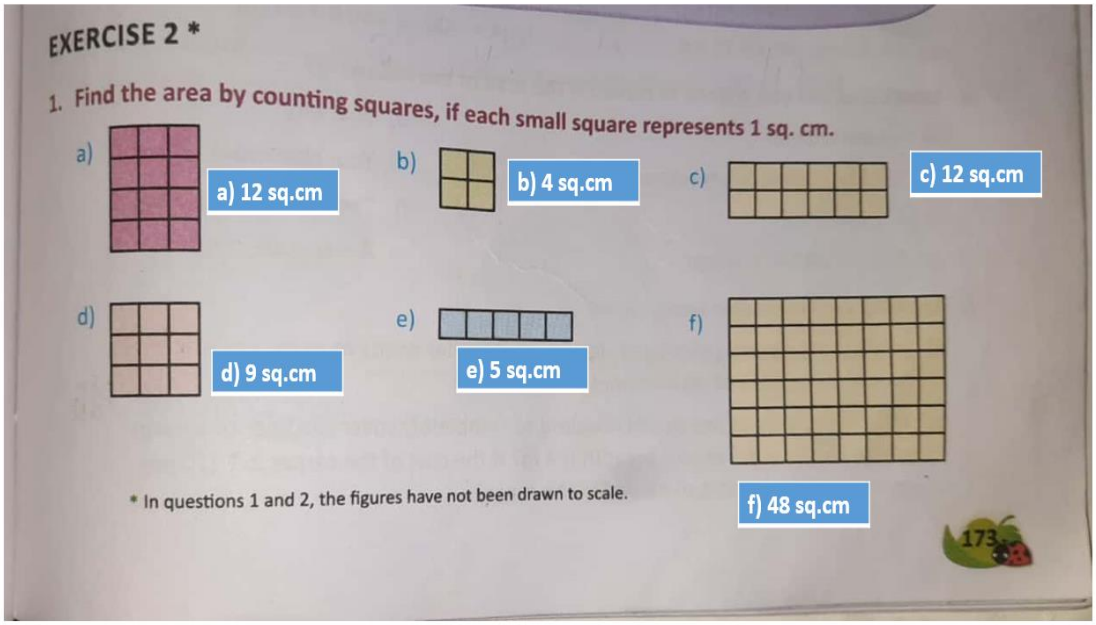
He walks 8 times aound the rectangular park = $8 \times 350 \text{ m}$

$= 2{,}800 \text{ m}$

$= 2{,}800 \div 1000$

$= 2 \text{ km } 800 \text{ m}$

Ans: He walks 2 km 800 m around the park everyday.



EXERCISE 2 *

1. Find the area by counting squares, if each small square represents 1 sq. cm.

a) a) 12 sq.cm

b) b) 4 sq.cm

c) c) 12 sq.cm

d) d) 9 sq.cm

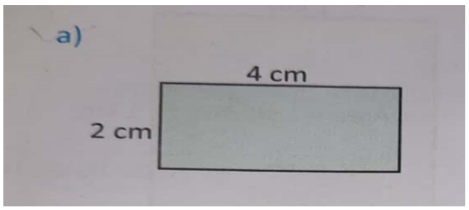
e) e) 5 sq.cm

f) f) 48 sq.cm

* In questions 1 and 2, the figures have not been drawn to scale.

173

Q.2 Find the area by using the formula.

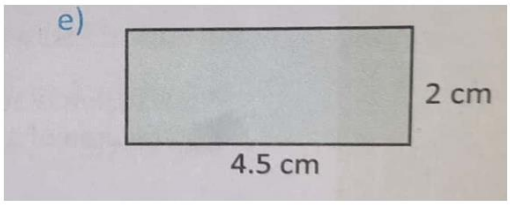


Area of rectangle = $l \times b$

Here, $l = 4$ cm and $b = 2$ cm

Perimeter of keyboard = 4 cm × 2 cm

= 8 sq. cm



Area of rectangle = $l \times b$

Here, $l = 4.5$ cm and $b = 2$ cm

Perimeter of keyboard = 4.5 cm × 2 cm

= 9.0 sq. cm

		1	
		4.	5
	x		2
		9.	0

Q.4 Find the area of squares with the following lengths of sides.

a) 5 cm

Area of square = $s \times s$

Here, $s = 5$ cm

Area of square= 5 cm × 5 cm

= 25 sq. cm

d) 2.5 cm

Area of square = $s \times s$

Here, $s = 2.5$ cm

Area of square = 2.5 cm × 2.5 cm

= 6.25 sq. cm

Q.5 OMIT

Q.6 Which unit will you choose to measure the area of the following?

a) A handkerchief sq.m

c) Your city sq.m

f) The cover of this book sq.cm

Q.7 Applying area measures (story sums)

b) What is the area of the carpet required to completely cover the floor of a room whose length is 4.5 m and breadth is 4 m? If the cost of the carpet is ₹ 50 per sq.m, what is the cost of carpeting the room?

Solution:

Length of carpet = 4.5 m

Breadth of carpet = 4 m

Area of the carpet = $l \times b$

$= 4.5 \text{ m} \times 4 \text{ m}$

$= 18.0 \text{ sq.m}$

Cost of the carpet = ₹ 150 per sq.m

Cost of carpeting the room =

₹ 150×18

= ₹ 2,700

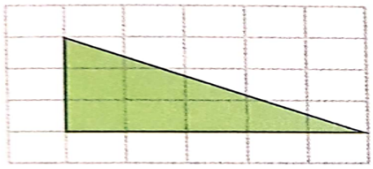
Ans: The cost of carpeting the room is ₹ 2,700

	4		
	1	5	0
	x	1	8
1	2	0	0
+1	5	0	0
2	7	0	0

EXERCISE 3

Q.1 Find the approximate areas if each small square represents 1 sq.cm.

a)

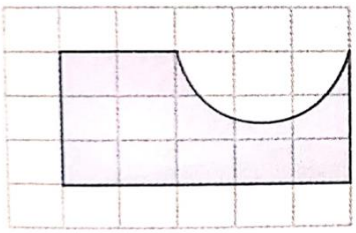


Count the whole squares inside the triangle = 4

Count the squares that are half or more than half inside the triangle = 3

The area of the triangle is about 4 + 3 = 7 sq.cm

d)

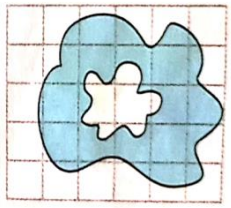


Count the whole squares inside the triangle = 9

Count the squares that are half or more than half inside the triangle = 2

The area of the triangle is about 9 + 2 = 11 sq.cm

f)



Count the whole squares inside the triangle = 3
Count the squares that are half or more than half inside the triangle = 9
The area of the triangle is about 3 + 9 = 12 sq.cm

EXERCISE 4-6 OMIT

MENTAL MATHS

1.If l = 5 m, b = 4 m, perimeter = 18 m and area = 20 sq.m

2. The area of square = 36 sq.cm. Its side = 6 cm , perimeter = 24 cm

3. All rectangles with the same area have the same perimeter. True or False? False

4. All squares with the same area have the same perimeter. True or False? True

DELHI PUBLIC SCHOOL, GANDHINAGAR

CLASS: 5 **SUBJECT: MATHS**

CHAPTER- 13

Graphs

13

Graphs

Learning Outcomes

At the end of this lesson, you will be able to:

- use tally marks to tabulate data.
- draw and interpret bar graphs, circle graphs and line graphs.

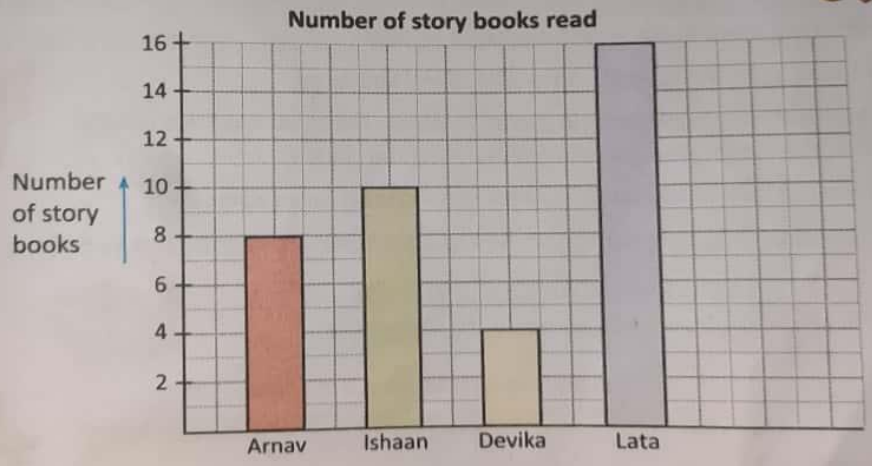
GET STARTED

Graphs in real life

Arnav, Ishaan, Devika and Lata are very fond of reading.

They recorded the number of story books they read during the summer vacation month of May.

They represented the data in a bar graph.



Answer the following questions.

a) What is the title of the graph?

b) What does the vertical scale show?

c) What is the scale used in the vertical scale?

d) Who read the most number of books?

e) Who read the least number of books?

f) How many more books did Lata read than Devika?

EXERCISE 1

1. Complete the table showing the result of a survey of Class 5 students. Answer the questions below.

Favourite after-school activities of students of Class 5

Activity	Tally marks	Number
Watching TV	𝍸 𝍸 //	12
Reading storybooks	𝍸 𝍸	10
Playing indoor games	𝍸 𝍸 //	12
Playing outdoor games	𝍸 𝍸 𝍸 ///	18
Sleeping	//	2

a) Which is the most favourite activity?

b) Which two activities are equally popular?

c) How many students were surveyed?

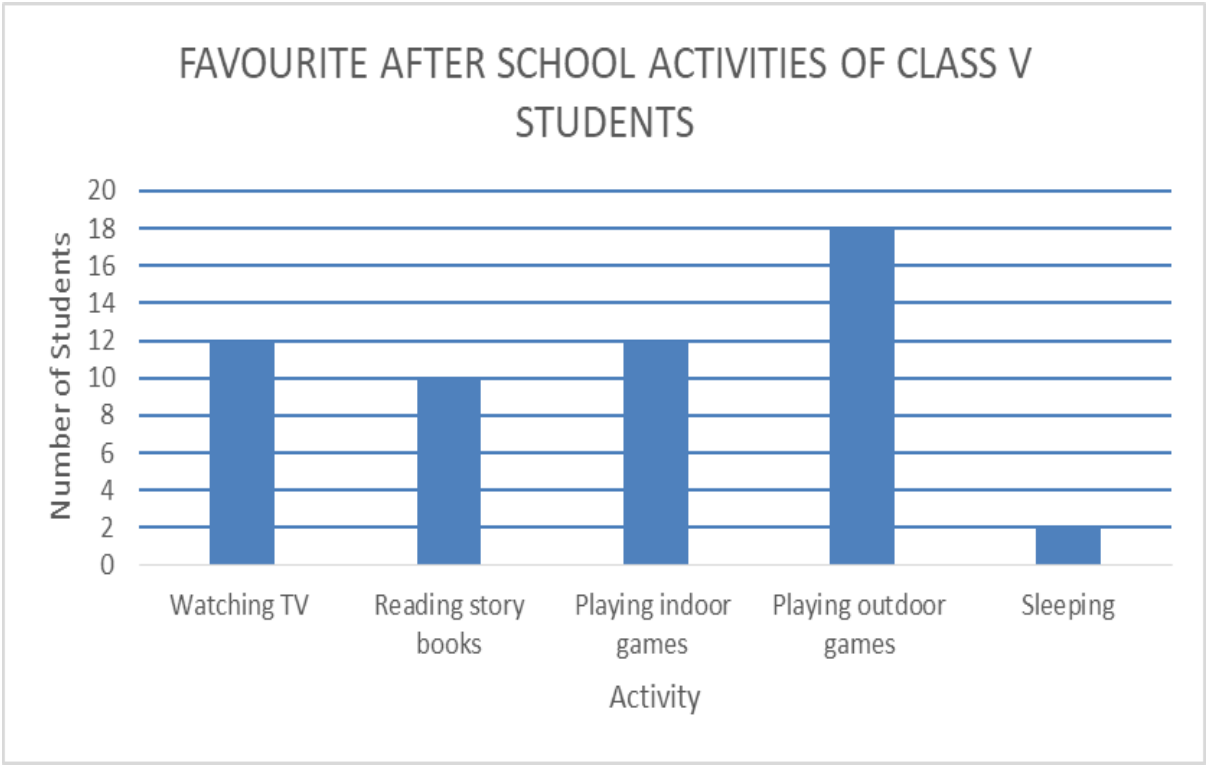
Ans. a) Playing outdoor games is the most favourite activity.

Ans. b) Watching TV and Playing indoor games are equally popular.

Ans. c) 54 students were surveyed (12 + 10 + 12 + 18 + 2 = 54)

---

2. Represent the data of question 1 on a bar graph. Choose a suitable vertical scale.



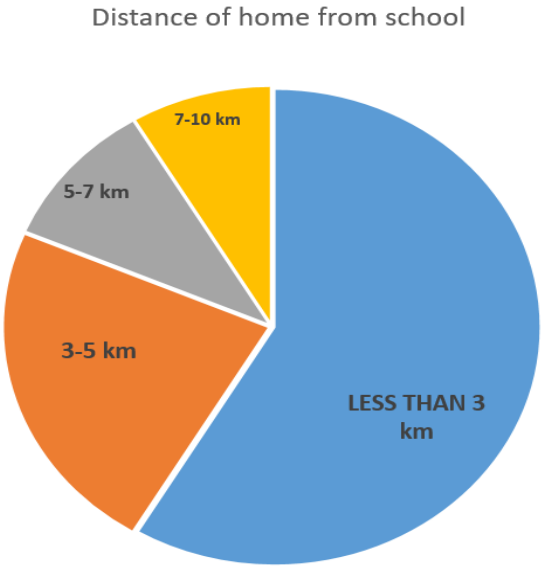
EXERCISE 2

1. Adarsh School conducted a survey of the distances students lived from the school. The table shows the data.

Distance of home from school	Number of students	Fraction of total
Less than 3 km	100	$\frac{100}{200} = \frac{1}{2}$
3 – 5 km	50	$\frac{50}{200} = \frac{1}{4}$
5 – 7 km	25	$\frac{25}{200} = \frac{1}{8}$
7 – 10 km	25	$\frac{25}{200} = \frac{1}{8}$

TOTAL = 200

Complete the table and draw the circle graph to represent the data.

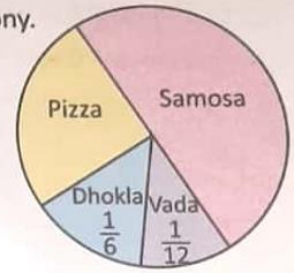


2. A restaurant owner wants to open a restaurant in Garden Estate colony. The circle graph represents the favourite snacks of people living in Garden Estate. The total number of residents surveyed was 144.

a) Find the number of people who like different snacks.

b) Which snack should always be available in the restaurant?

c) Which snack is liked by so few people that it can be avoided?



Ans a) Samosa = $\frac{1}{2}$ of 144 = 144 ÷ 2 = 72

Vada = $\frac{1}{12}$ of 144 = 144 ÷ 12 = 12

Dhokla = $\frac{1}{6}$ of 144 = 144 ÷ 6 = 24

Pizza = $\frac{1}{4}$ of 144 = 144 ÷ 4 = 36

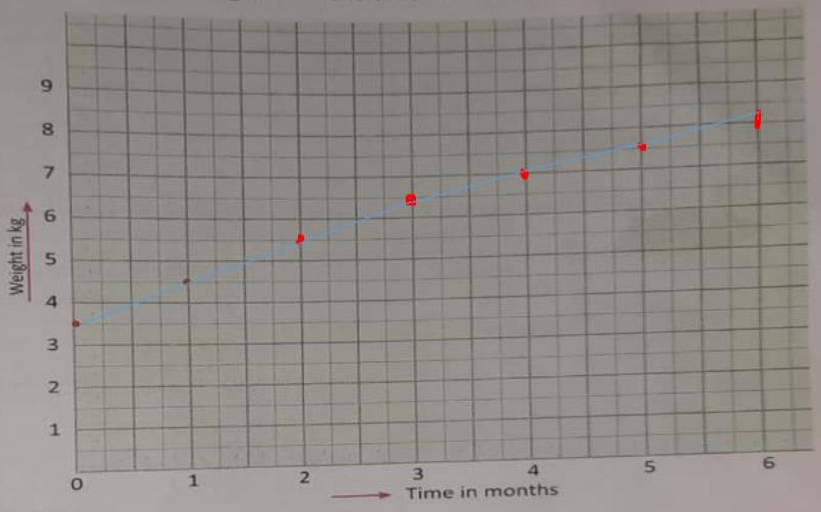
Ans b) Samosa

Ans c) Vada

EXERCISE 3

1. The table is a record of Deepak's weight from the time he was born.

Month	Weight (kg)
0	3.5
1	4.5
2	5.5
3	6.5
4	7.0
5	7.5
6	8.0



Complete the line graph.

Answer the following questions.

a) What was Deepak's weight when he was born?

b) What was his increase in weight after 3 months?

c) How much weight did he gain in the first 6 months?

d) Guess what his weight will be after 7 months.

ANSWERS OF EXERCISE 3 Q.1

Ans a) 3.5 kg

Ans b) $6.5 - 3.5 = 3$ kg

Ans c) $8 - 3.5 = 4.5$ kg

Ans d) 8.5 kg

DELHI PUBLIC SCHOOL, GANDHINAGAR

CLASS : 5 **SUBJECT: MATHS**

Academic Session 2021-22

Chapter :9

Measurement

Check what you know? T.B.

1. In which unit you will measure the following?

a) Your weight?
b) Capacity of the bucket?
c) The distance between two cities?
d) The length of the pencil?

2. Convert and fill in the blanks.

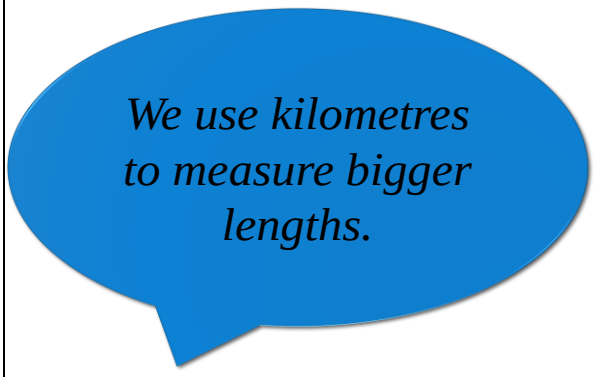
a) 7 m 50 cm = 750 cm

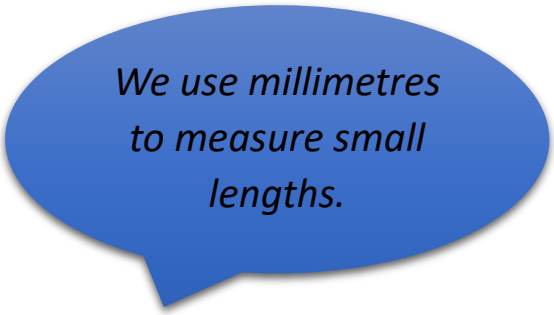
b) 5005m = 5 km 5 m

c) $3\frac{1}{2}$ km = 3500 m

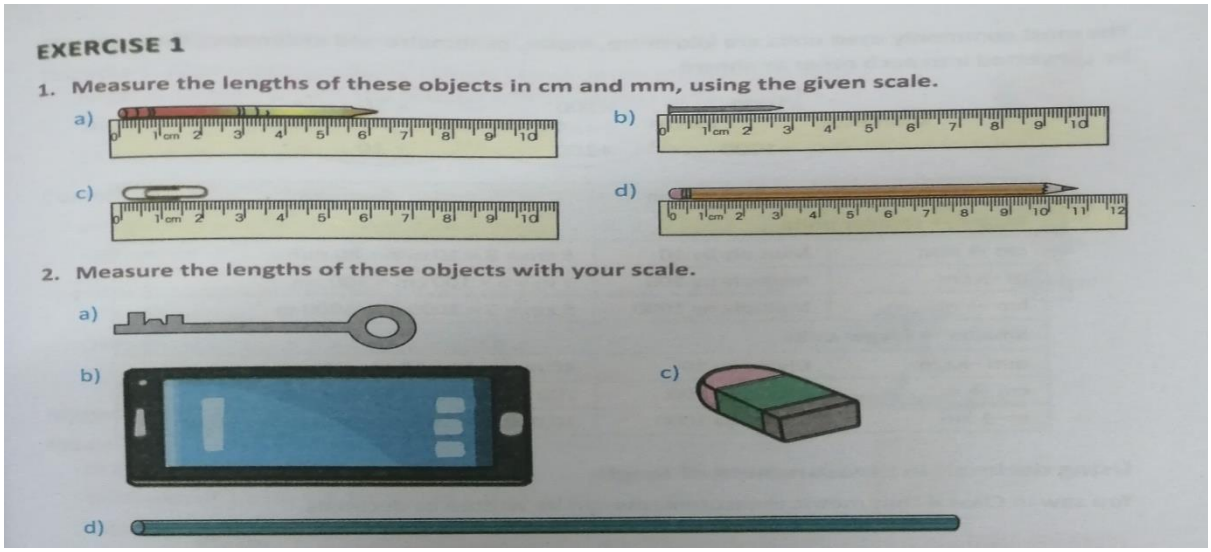
Concepts Section

Measurement of Length

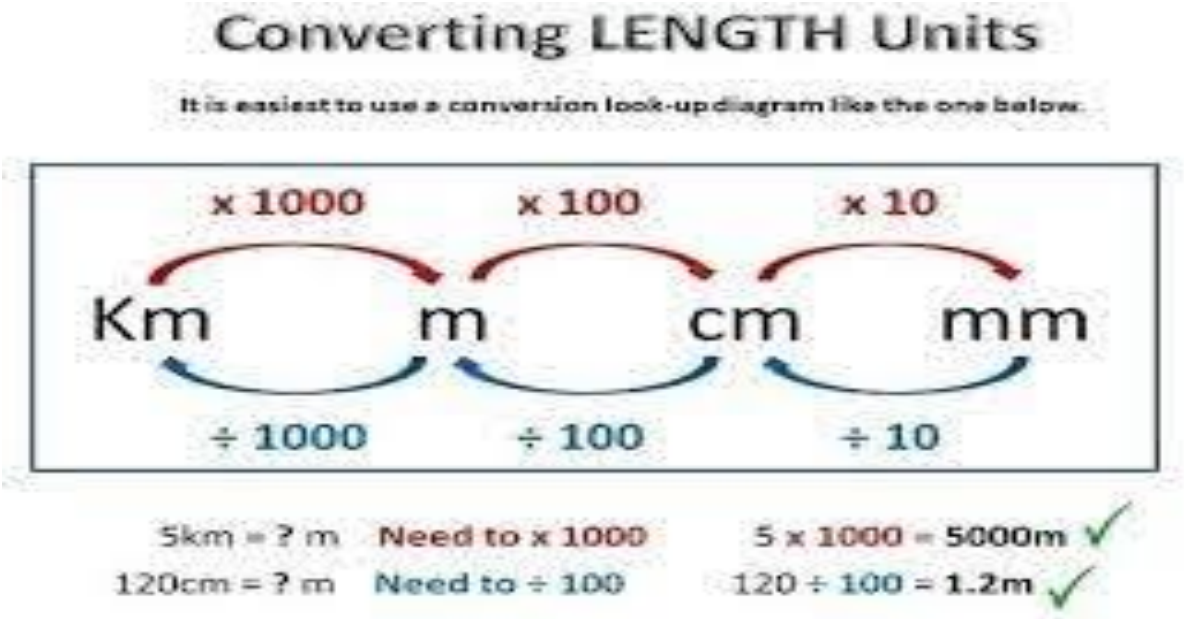




Exercise 1 (Text Book)



Relationship between different units of length.



EXERCISE 2

1.Fill in the blanks:

b) 10 km 150 m = 10150 m = 10.150 km

c) 15 m 75 cm = 1575 cm = 15.75 m

d) 25 cm 5 mm = 255 mm = 25.5 cm

H.W. (H)

2. Fill in the blanks:

a) Length of a tv remote = 155mm = 15.5 cm.

c) Length of a maths book = 28.5cm = 285 mm.

h) Length of a road = 0.45km = 450 m.

H.W. (I) and (J)

3. Applying measurements.

a) Rakesh is 1.35m tall. Mahesh is 130cm tall. Who is taller? By how much?

Solution:

Rakesh's height = 1.35m

(1.35m x 100cm = 135cm)

= 135cm

Mahesh's height = -130cm.

= 005cm

Answer: Rakesh is taller by 5cm.

e) Salma travelled 15.5km by metro and 750m by rickshaw. How many kilometres did she travel in all?

Solution:

Distance travelled by metro = 15.5km (15.5km x 1000 = 15500m)

= 15500m

Distance travelled by metro = + 750m

= 16250m

= 16.250km

Answer: She travelled 16.250km in all.

Exercise: 3

1. Fill in the blanks.

a) 6kg 345g = 6345 g = 6.345 kg.

c) 100kg 1g = 100001 g = 100.001 kg.

e) 0.955kg = 0.955kg = 955 g

2. Fill in the blanks.

a) 0.54kg = 540 g.

c) 2.05kg = 2050 g.

e) 5050g = 5.050 kg.

h) A pencil weighs 25g = 0.025 kg.

3. Applying measurements.

a) A pencil box weighs 225g. How much do 8 such pencil boxes weigh in kg?

Solution:

Weight of 1 pencil box = 225g

Weight of 8 pencil boxes = 225g x 8

= 1800g (1800 ÷1000)

Answer: Weight of 8 pencil boxes = 1.800kg.

Exercise 4

1. Fill in the blanks:

a) 5 ℓ 535 ml = 5535 ml = 5.535ℓ

e) 0.805 l = 805 ml

H.W. (F) and (J)

2. Fill in the blanks:

a) 0.45 ℓ = 450 ml

f) 10203 ml = 10.203 ℓ

h) Capacity of a teaspoon = 5ml = 0.005 ℓ

i) Capacity of an oil can = 5600 ml = 5.600ℓ **H.W. (J)**

3. Applying measurements:

c) Manu's family buys 1500 ml milk in the morning and 2750 ml in the evening.

How many litres of milk do the buy in a day?

Solution:

Milk bought in the morning = 1500 ml

Milk bought in the evening = + 2750 ml

= 4250 ml (4250 ml x 1000 = 4 ℓ 250 ml)

Answer: His family buys 4 ℓ 250 ml milk in a day.

H.W. (D)

Exercise 5

1. Add:

a) 4 kg 350 g + 5 kg 700 g

4 kg 350 g

\+ 5 kg 700 g

10 kg 050 g

e) 12 m 55 cm + 2m 45 cm

12 m 55 cm

\+ 2m 45 cm

15 m 00 cm

H.W. (C) and (F)

Subtract

a) 12km 345m – 12km 345m

12km 345m

\- 10km 445m

01km 900m

H.W (C) and (F)

e) 6kg 345g – 2kg 555g

6kg 345g

\- 2kg 555g

3kg 790g

3. Applying measurements

The Mehta family is travelling by car to their farmhouse 20km away. They stop at a tea stall after travelling 10km 555m. What is the distance of the farmhouse from the tea stall?

Solution:

Total distance = 20 km000m

Distance covered = - 10 km 555m

Distance left = 09 km 445m

Ans : The distance of the farmhouse from the tea stall is 9km 445m.

c) Asha's height was 1m 23cm on her 6th birthday. In 4 years, her height increased by 21cm. What was her height on her 10th birthday?

Solution:

Asha's height on her 6th birthday = 1m 23cm

Increased height = + 21cm

Asha's height on her 10th birthday = 1m 44cm

Answer: Her height on her 10th birthday is 1m 44cm.

H.W (D) and (E)

Mental Maths

1. a) 5 kg 5 g = 5005 kg
2. c) 5 cm 5 mm = 505 cm

5.If the thickness of 100 pages in a book is 1 cm, the thickness of 1 page = 0.01 cm

8. b) 4 ℓ 330 ml + 670 ml = (330 ml + 670 ml = 1 ℓ)

= 4 ℓ + 1 ℓ

= 5 ℓ

Test

1. A bottle of sauce has 500 ml of sauce. From the bottle, 5 helping of sauce of 65 ml each was taken out. How much sauce is left in the bottle?

2. Fill in the blanks:

a) 23 kg 78 g = _____ kg

b) 896 m = _____ km

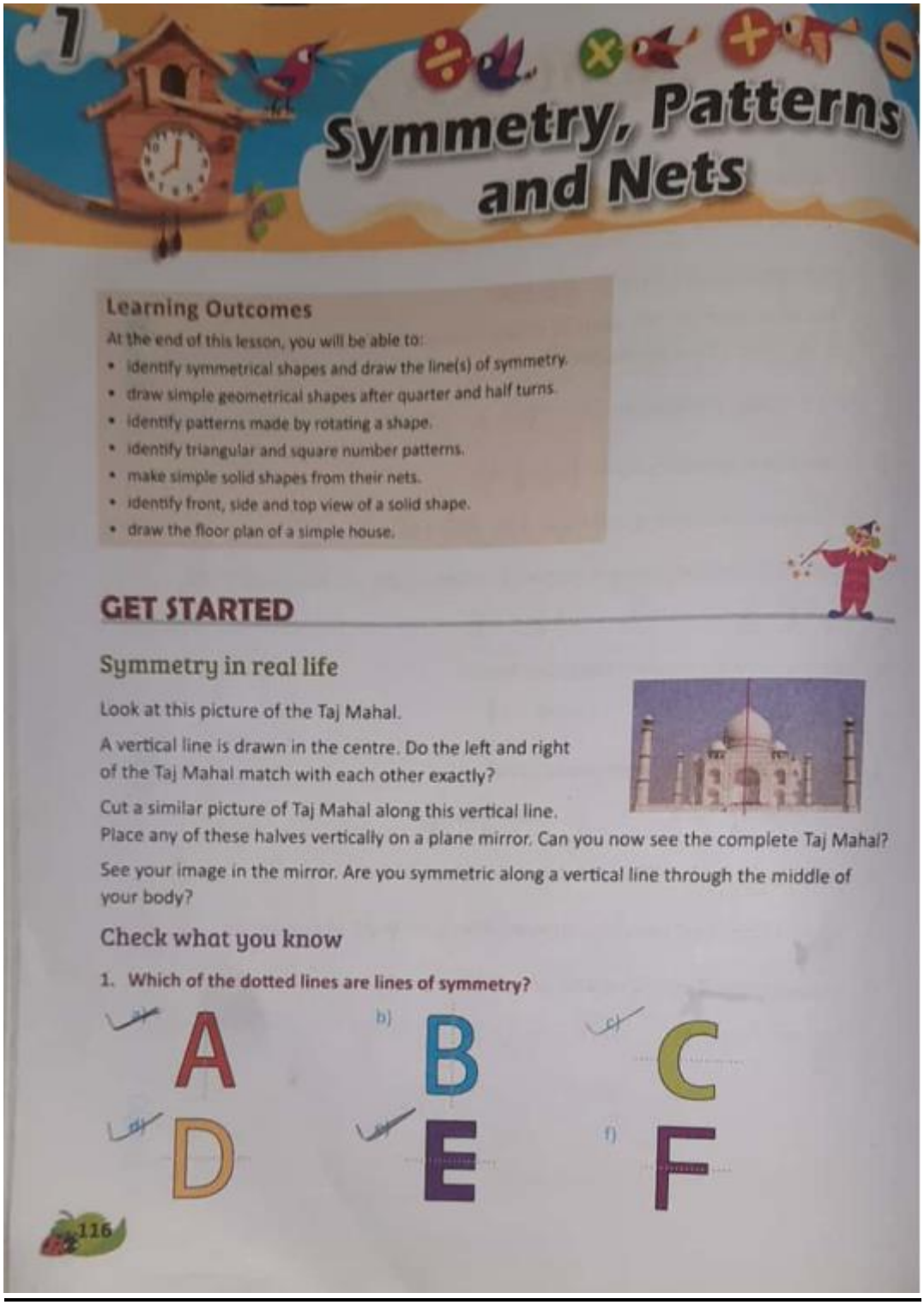
DELHI PUBLIC SCHOOL, GANDHINAGAR

CLASS: 5 **SUBJECT: MATHS**

Academic Session 2021-22

CHAPTER- 7

Symmetry, Patterns and Nets (WHOLE CHAPTER TO BE DONE IN TEXTBOOK)



7

Symmetry, Patterns and Nets

Learning Outcomes

At the end of this lesson, you will be able to:

- identify symmetrical shapes and draw the line(s) of symmetry.
- draw simple geometrical shapes after quarter and half turns.
- identify patterns made by rotating a shape.
- identify triangular and square number patterns.
- make simple solid shapes from their nets.
- identify front, side and top view of a solid shape.
- draw the floor plan of a simple house.

GET STARTED

Symmetry in real life

Look at this picture of the Taj Mahal.

A vertical line is drawn in the centre. Do the left and right of the Taj Mahal match with each other exactly?

Cut a similar picture of Taj Mahal along this vertical line. Place any of these halves vertically on a plane mirror. Can you now see the complete Taj Mahal?

See your image in the mirror. Are you symmetric along a vertical line through the middle of your body?

Check what you know

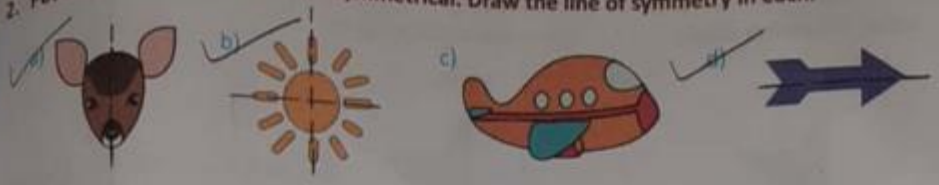
1. **Which of the dotted lines are lines of symmetry?**

a) A b) B c) C

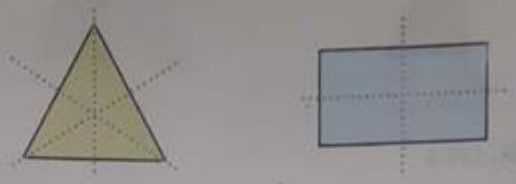
d) D e) E f) F

116

2. Put a ✓ on the shapes that are symmetrical. Draw the line of symmetry in each.

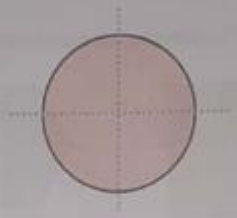


Some shapes have more than one line of symmetry.



How many lines of symmetry does a circle have?

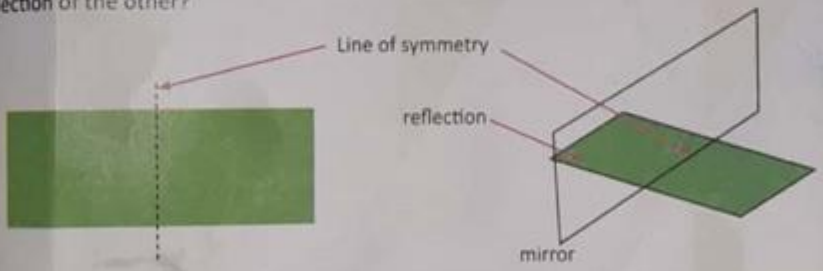
Two are marked—can you mark more?



CONCEPTS SECTION

♦ Symmetry and reflection

A rectangle is symmetric. Place a mirror along the line of symmetry. Is one half a reflection of the other?



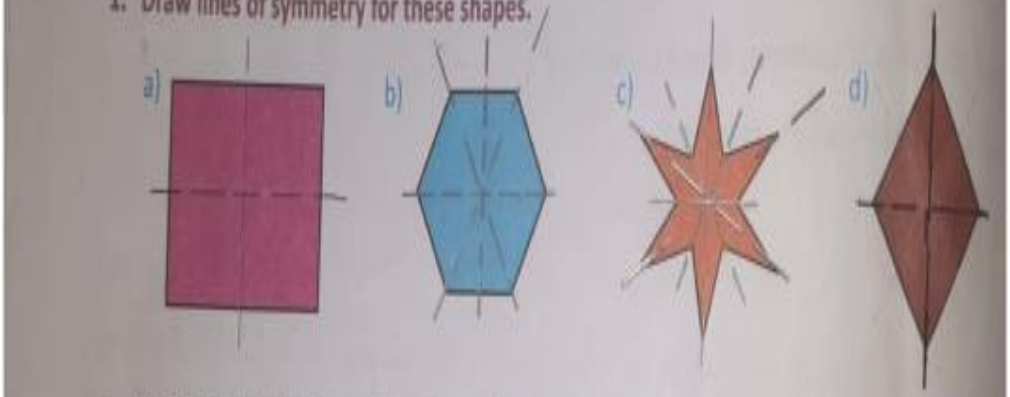
Try with the symmetrical shapes on the previous page.

In symmetrical shapes, if a mirror is kept along the line of symmetry, one half is a reflection of the other.

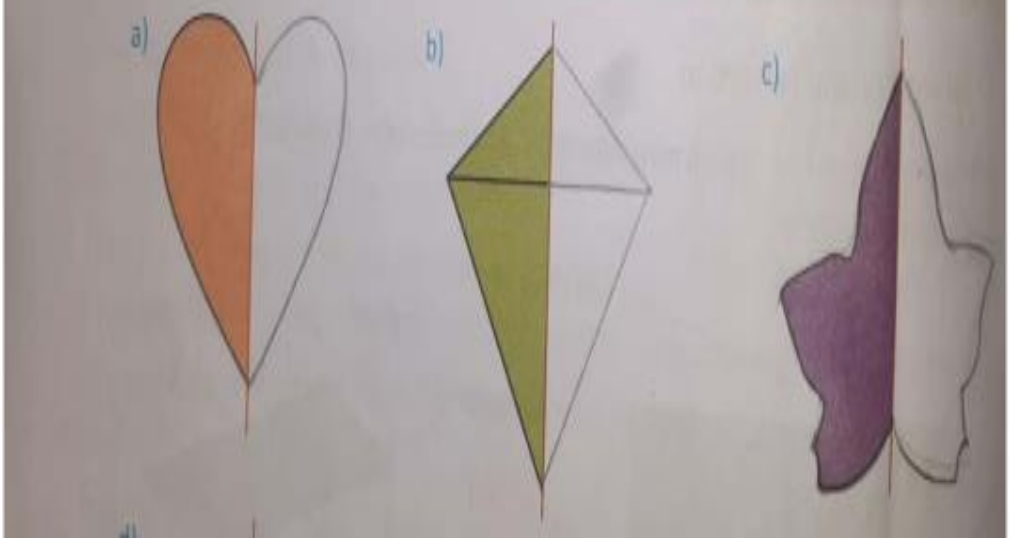
We say that symmetric shapes have **mirror** (or **reflection**) **symmetry** along their lines of symmetry.

EXERCISE 1

1. Draw lines of symmetry for these shapes.



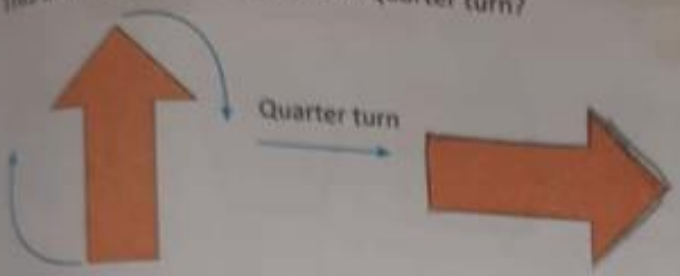
2. Put a mirror along the red line. Draw the symmetric figure in your notebook.



Turning shapes

Quarter turn

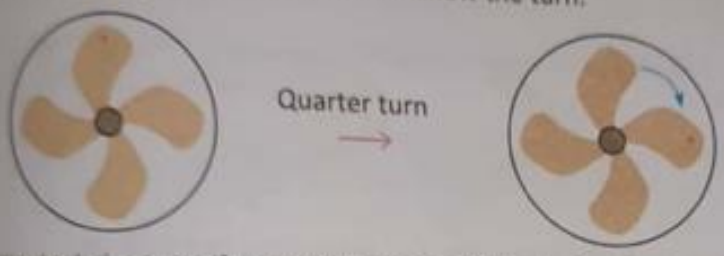
This arrow looks different after a quarter turn?



The arrow has been turned **clockwise**, that is, in the same direction as the rotation of the hands of a clock.

But this fan looks the same after a quarter clockwise turn.

A dot is marked on one of its blades to show the turn.



Will it look the same if the turn is in the **anti-clockwise** direction?

EXERCISE 2

1. Give these shapes a quarter turn and remake them in your notebook. Put a ✓ on the ones that look the same after the turn. Mark a dot to help if you want.

a)

b)

c)

d)

e)

f)

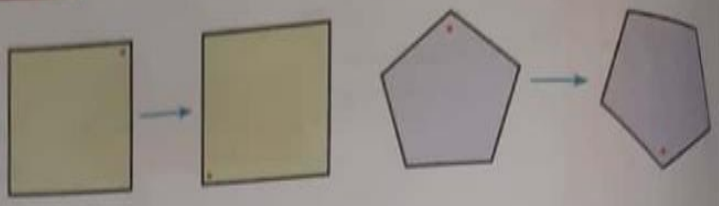
This is called a paisley design. It is commonly used in clothes such as saris.

Half a turn

This is the top of a tap. Rotate it by half a turn.

It still looks the same!

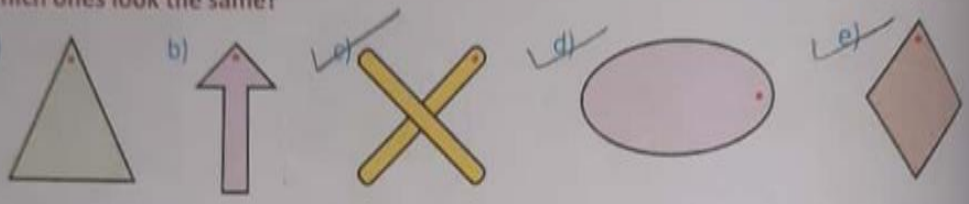
Some shapes look the same after half a turn, but others do not. The dot will help you see the turn.



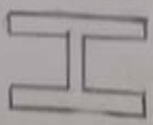
EXERCISE 3

1. Give the shapes a half turn and remake them. Use the dot to help. Which ones look the same?

a) b) c) d) e)



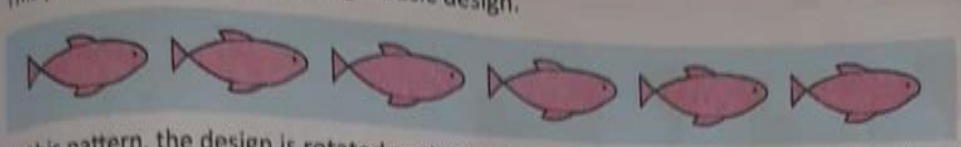
2. Give each shape a quarter turn and a half turn. Put a ✓ on the ones that look the same. Use dots to help if you want.

Shape	Quarter turn	Half turn
a) 		
b) 		
c) H		H
d) N	N	N

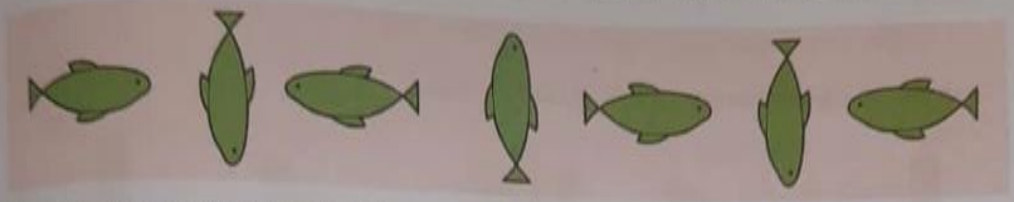
Patterns

In Class 4, you learnt that patterns can be made by repeating a design. This method is commonly used to create patterns on cloth.

This pattern is made by repeating a basic design.

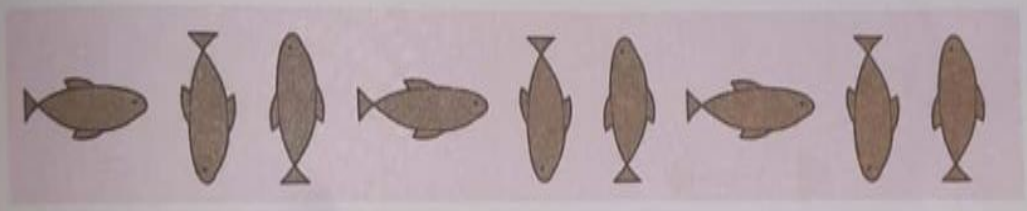


In this pattern, the design is rotated each time by one-quarter turn in the clockwise direction.



The same basic design is used in this pattern, but it is rotated each time by half a turn, either clockwise or anticlockwise.

Other rotations can also be used. In this pattern, the basic design is rotated by one-quarter, first clockwise and then anti-clockwise.



EXERCISE 4

1. Study the patterns and say what rule is followed. Complete the pattern.

a)

b)

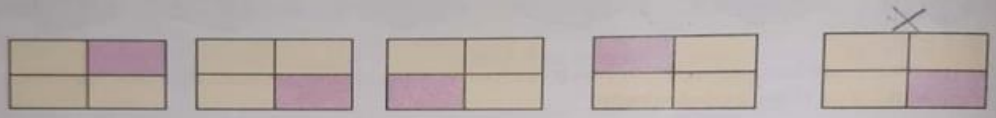
c)

d)

2. Look for the design that does not fit in, and correct it.

a)

b)



c)

Number patterns

Numbers also form patterns.

The easiest pattern is 1, 2, 3, 4, 5,... To get the next number, simply add 1!

2, 4, 6, 8, 10,... is a pattern of consecutive even numbers. To get the next number, add 2.

1, 2, 4, 7, 11, ... is a pattern. To get the second number, add 1 to the first number. To get the third number, add 2 to the second number,... and so on.

Rapid check

Make the pattern of consecutive odd numbers. What is the rule?

EXERCISE 5

1. Find the rule for making these number patterns. Use the rule to find the next 3 numbers.

a) 1, 12, 23, 34, 45, 56, 67, 78

b) 2, 3, 5, 9, 17, 33, 65, 129

c) 1, 4, 13, 40, 121, 364, 1093

d) 48, 47, 45, 42, 38, 33, 27, 20

2. Study the patterns. Fill in the blanks.

a) $1 + 3 = 4 = 2 \times 2$

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

$1 + 3 + 5 + 7 = 16 = 4 \times 4$

$1 + 3 + 5 + 7 + 9 = 25 = 5 \times 5$

$1 + 3 + 5 + 7 + 9 + 11 = 36 = 6 \times 6$

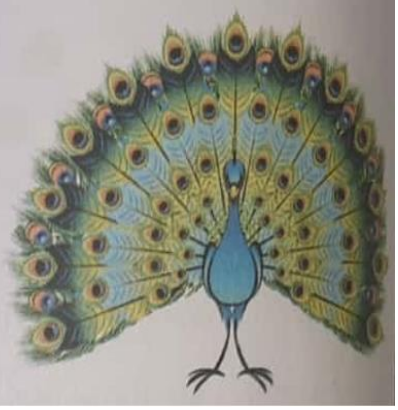
b) $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 = 55$

$11 + 12 + 13 + 14 + 15 + 16 + 17 + 18 + 19 + 20 = 155$

$21 + 22 + 23 + 24 + 25 + 26 + 27 + 28 + 29 + 30 = 255$

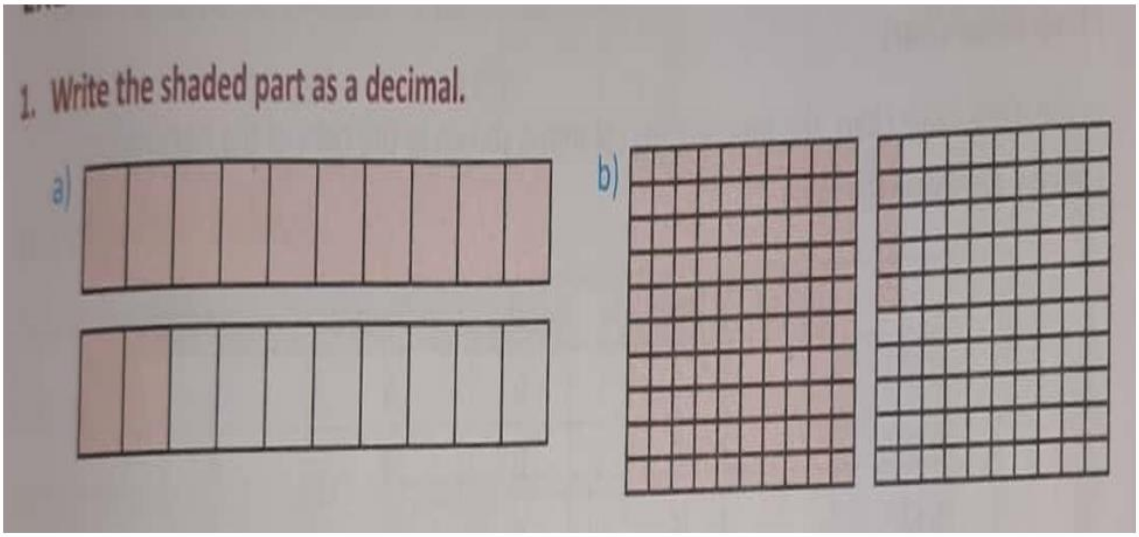
$31 + 32 + 33 + 34 + 35 + 36 + 37 + 38 + 39 + 40 = 355$

$91 + 92 + 93 + 94 + 95 + 96 + 97 + 98 + 99 + 100 = 455$



CHAPTER- 6
Decimals

EXERCISE 1



a) 1.2 (b) 1.05

Q.2 Write the place value of the digit in red.

a) 5.**6**8 = 6 tenths or 0.60

c) 1**4**1.36 = 4 hundreds or 400

d) 204.0**7** = 7 hundredths or 0.07

Q.3 Write as decimals.

a) $\frac{32}{100}$ = 0.32 (c) 5 $\frac{4}{100}$ = 5.04 (g) $\frac{555}{100}$ = 5.55 (h) $\frac{145}{10}$ = 14.5

Q.4 Write as fractions.

a) 0.5 = $\frac{5}{10}$ (c) 0.05 = $\frac{5}{100}$ (e) 9.09 = $\frac{909}{100}$

EXERCISE 2

Q.1 Write as decimals.

a) $\frac{545}{100}$ = 5.45

c) $\frac{545}{10}$ = 54.5

g) $4\ \frac{123}{1000}$ = 4.123

h) $10\ \frac{99}{1000}$ = 10.099

Q.2 Write as fractions or mixed numbers.

a) 0.088 = $\frac{88}{1000}$

c) 4.009 = $\frac{4009}{1000}$ OR $4\ \frac{9}{1000}$

d) 10.095 = $\frac{10095}{1000}$ OR $10\ \frac{95}{1000}$

Q.3 Write the expanded form as a decimal.

a) $\frac{4}{10} + \frac{3}{100} + \frac{9}{1000}$ = 0. 439

c) $\frac{6}{10} + \frac{5}{1000}$ = 0.605

d) 0.5 + 0.03 + 0.002 = 0.532

e) 8 + 0.1 + 0.08 + 0.009 = 8.189

Q.4 Write the fractional and decimal expanded forms.

a) 5.089

Ans:- Fractional expanded form: $5 + 0 + \frac{8}{100} + \frac{9}{1000}$

Decimal expanded form : 5 + 0 + 0.08 + 0.009

H.W.- (d)

EXERCISE 3

Q.1 Fill in the blanks with equivalent decimals.

a) 1.2 = 1.20 = 1.200

c) 0.90 = 0.900 = 0.9000

d) 5.500 = 5.50 = 5.5

f) 3.500 = 3.50 = 3.5

Q.2 Put a tick mark on the like decimals.

a) 5.36, 10.01 ✓

d) 35.45, 35.342

Q.3 Change into like decimals.

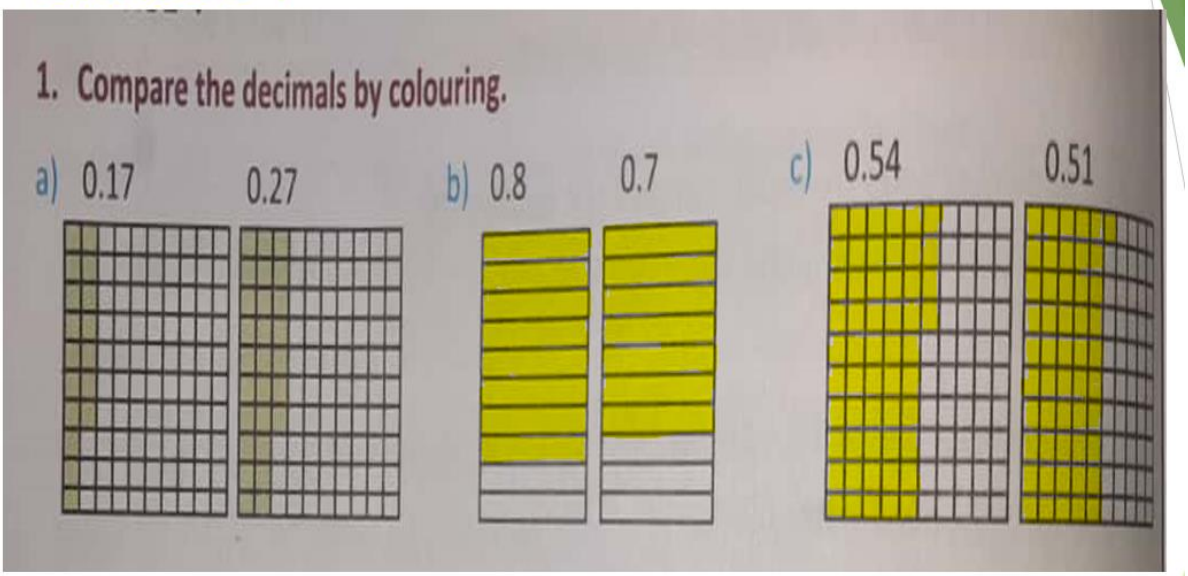
a) 0.8, 9.09

Ans: 0.80, 9.09

d) 3.8, 12.426, 31.67

Ans: 3.800, 12.426, 31.670

EXERCISE 4



Q.2 Compare; fill in the ◯ with >,< or =.

a) 0.47 < 0.74

b) 7.07 < 7.70

c) 5.555 > 5.050

i) 34.034 < 34.340

Q.3 Arrange in descending order.

a) 4.56 5.56 4.056 5.065

Ans: 5.560 5.065 4.560 4.056

b) 2.2 2.02 2.022 2.002

Ans: 2.200 2.022 2.020 2.002

H.W. - (f)

Q.4 Arrange in ascending order.

a) 5.3 3.5 5.35 3.53

Ans: 3.50 3.53 5.30 5.35

b) 12.12 12.121 12.212 12.21

Ans: 12.120 12.121 12.210 12.212

H.W. - (e)

6.During the day Lata drinks 0.65 l milk and Ayesha drinks 0.7 l. Who drinks more milk?

Solution:

Lata drinks = 0.65 l milk

Ayesha drinks = 0.7 l milk

Compare 0.65 and 0.7

Here, 0.65 < 0.70

So, Ayesha drinks more milk than Lata.

EXERCISE 5

Q.1 OMIT

Q.2 Add.

a)

		O		th
		1		
		3	.	4
	+	5	.	6
		9	.	0

c)

		T	O		th	h th	T th
					1	1	
			0	.	2	3	4
	+	1	0	.	5	6	7
		1	0	.	8	0	1

f)

		T	O		th	h th	t th
			1		1		
			6	.	7	8	
	+		0	.	6	7	8
		1	7	.	4	5	8

Q.3 Arrange in columns and add.

a) 21.47, 9.58

		T	O		th	h th	
		1	1		1		
		2	1	.	4	7	
	+		9	.	5	8	
		3	1	.	0	5	

d) 0.9, 9.999

		T	O		th	h th	t th
			1				
			0	.	9		
	+		9	.	9	9	9
		1	0	.	8	9	9

f) 100.001, 1.1, 10.01

	H	T	O		th	h th	t th
	1	0	0	.	0	0	1
			1	.	1		
+		1	0	.	0	1	
		1	1	.	1	1	1

6. Mrs Gupta bought 2.55.kg of potatoes and 1.950 kg of tomatoes. What is the total weight of the vegetables she bought?

Solution:

Weight of potatoes = 2.55.kg

Weight of tomatoes = 1.950 kg

Total weight of vegetables she bought = 2.55.kg + 1.950 kg

	O		th	h th	t th	
	1		1			
	2	.	5	5		kg
+	1	.	9	5	0	kg
	4	.	5	0	0	kg

Ans: The total weight of vegetables is 4.5 kg.

H.W. - Q. 5

EXERCISE 6

Q. 1 Subtract.

		O		th
a)		5		14
		~~6~~	.	~~4~~
	-	5	.	6
		0	.	8

		T	O		th	h th	t th
e)			4		13	9	10
			~~5~~	.	~~4~~	~~0~~	~~0~~
	-		4	.	8	7	5
			0	.	5	2	5

H.W.- (f)

Q.2 Arrange in columns and subtract.

a) 20.46 - 10.59

	T	O		th	h th
	1	9		13	16
	~~2~~	~~0~~	.	~~4~~	~~6~~
-	1	0	.	5	9
	0	9	.	8	7

d) 7.234 - 1.567

		O		th	h th	t th
		6		11	12	14
		~~7~~	.	~~2~~	~~3~~	~~4~~
-		1	.	5	6	7
		5	.	6	6	7

H.W. h) 25 - 2.505

3. Bindu had ₹ 100 with her. She bought a pen for ₹ 44.95. How much money is left with her?

Solution:

Money Bindu had = ₹ 100

Cost of pen = ₹ 44.95

Money left with her = ₹ 100 - ₹ 44.95

	H	T	O		th	h th
	0	9	9		9	10
-	~~1~~	~~0~~	~~0~~	.	~~0~~	~~0~~
		4	4	.	9	5
	0	5	5	.	0	5

Ans: Bindu had ₹ 55.95 left with her.

H.W. Q.4

EXERCISE 7 – Q.1 & 2 OMIT

Q.3 Multiply

a) 0.4 x 4

		1		
		0	.	4
		x		4
		1	.	6

c) 0.15 x 9

		1	4	
		0.	1	5
		X		9
		1.	3	5

f) 6.4 x 12

		6	.	4
	x	1		2
	1	2		8
+	6	4		0
	7	6	.	8

g) 15 x 0.8

		4		
		1		5
	x	0	.	8
	1	2		0
+	0	0		0
	1	2	.	0

i) 3 x 4.45

	1	1	
	4.	4	5
		x	3
1	3.	3	5

k) 0.05 x 25

		1	
		2	
	0.	0	5
	x	2	5
	0	2	5
+ 0	1	0	0
	1.	2	5

Q.4 Fill in the blanks.

a)	32.4 x 10 = 324
c)	0.369 x 10 = 3.690 or 3.69
e)	0.25 x 100 = 25.00 or 25
g)	5.9 x 1000 = 5900.0 or 5900
i)	0.345 x 1000 = 345.000 or 345

(j) to (o) OMIT

5. A packet of biscuits weighs 50.25 g. Meera bought 15 packets for her birthday. What was the total weight of the biscuits?

Solution:

Weight of packet of biscuits = 50.25 g

Number of packets = 15

Total weight of biscuits = 50.25 g x 15

		1	2	
	5	0.	2	5
		x	1	5
2	5	1	2	5
+ 5	0	2	5	0
7	5	3.	7	5

Ans: The total weight of biscuits is 753.75 g

H.W. - 7

EXERCISE 8 – Q.1 & 2 OMIT

Q.3 Divide. Continue dividing till the remainder is 0.

a) 80.1 ÷ 6

		1	3 .	3	5
	6	8	0.	1	0
	-	6			
		2	0		
	-	1	8		
		0	2	1	
		-	1	8	
			0	3	0
			-	3	0
				0	0

d) 0.36 ÷ 8

		0 .	0	4	5
	8	0 .	3	6	0
	-	0			
		0	3		
		-	0		
			3	6	
		-	3	2	
			0	4	0
			-	4	0
				0	0

g) 9.54 ÷ 8

	1.	1	9	2	5
8	9.	5	4	0	0
-	8				
	1	5			
	-	8			
	0	7	4		
	-	7	2		
		0	2	0	
		-	1	6	
			0	4	0
			-	4	0
				0	0

H.W. - (h)

Q.4 Fill in the blanks.

a)	12.4 ÷ 10 = 1.24
c)	0.963 ÷ 10 = 0.0963
e)	3.76 ÷ 100 = 0.0376
g)	9 ÷ 1000 = 0.009
h)	112.3 ÷ 1000 = 0.1123

(j) to (o) OMIT

6. A train covers a distance of 248.04 km in 6 hours. How much distance does it cover in 1 hour?

Solution:

Distance covered by train IN 6 hours = 248.04 km

Distance covered in 1 hour = 248.04 km ÷ 6

		4	1.	3	4
6	2	4	8.	0	4
-	2	4			
	0	0	8		
		-	6		
			2	0	
		-	1	8	
			0	2	4
			-	2	4
				0	0

Ans: The train covered 41.34 km in 1 hour.

EXERCISE 9

1. The price of a dozen bananas is ₹ 75.00. Find the cost of 15 bananas.

Solution:

Cost of 1 banana = ₹ 75.00 ÷ 12

= ₹ 6.25

Cost of 15 bananas = ₹ 6.25 x 15

	1	2	
	6.	2	5
	x	1	5
3	1	2	5
+ 6	2	5	0
9	3.	7	5

		6 .	2	5
	12 | 7	5.	0	0
	- 7	2		
	0	3	0	
	- 0	2	4	
		0	6	0
		-	6	0
			0	0

Cost of 15 bananas = ₹ 6.25 x 15

	1	2	
	6.	2	5
	x	1	5
3	1	2	5
+ 6	2	5	0
9	3.	7	5

Ans: The cost of 15 bananas is ₹ 93.75.

3. 25 mangoes weigh 4.5 kg. How much do a dozen mangoes weigh?

Solution:

Weight of 25 mangoes = 4.5 kg

Weight of 1 mango = 4.5 kg ÷ 25

		0.	1	8	
	25	4.	5	0	
	-	0			
		4	5		
	-	2	5		
		2	0	0	
	-	2	0	0	
		0	0	0	

Weight of 1 mango = 0.18

Weight of dozen mangoes = 0.18 x 12

		1	
	0.	1	8
	x	1	2
	0	3	6
+	0 1	8	0
	2 .	1	6

Ans: Weight of dozen mangoes is 2.16 kg.

MENTAL MATHS

1.	**38 ÷ 100 = 0.38**
2.	43.2 x 10 = 4320
3.	8.4 + 1.5 = 9.9
4.	10 - 3.8 = 6.2
5.	Which is greater - 0.12 or 0.112? 0.12 is greater.

DELHI PUBLIC SCHOOL, GANDHINAGAR

CLASS : 5 **SUBJECT: MATHS**

Academic Session 2021-22

TERM-2

CHAPTER- 5

FRACTIONS

What are Fractions ?

- A fraction is used to represent the portion/part of the whole thing. It represents the equal parts of the whole. A fraction has two parts, namely numerator and denominator. The number on the top is called the numerator, and the number on the bottom is called the denominator. The numerator defines the number of equal parts taken, whereas the denominator defines the total number of equal parts in a whole.

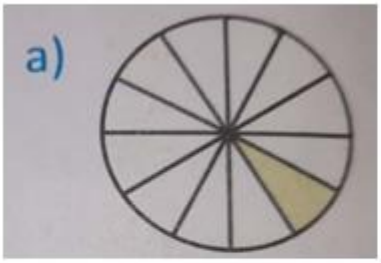
- For example, $\frac{5}{10}$ is a fraction.

- Here, 5 is a numerator and10 is a denominator

EXERCISE 1

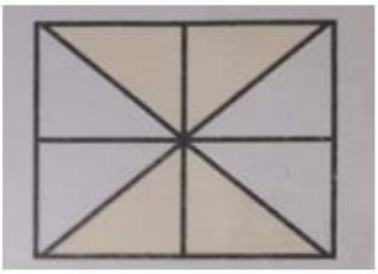
Q1 Write two equivalent fractions each for the coloured part. (TEXTBOOK)

a)



$\frac{1}{12} = \frac{2}{24}$

b)



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

Q2 Find the first four equivalent fractions by multiplication (multiply numerator and denominator by 2, 3, 4 and 5 in each case).

a) $\frac{2}{5}$

$\frac{2}{5} \times 2 = \frac{4}{10}$

$\frac{2}{5} \times 3 = \frac{6}{15}$

$\frac{2}{5} \times 4 = \frac{8}{20}$

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

d) $\frac{1}{4}$

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

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

$\frac{1}{4} \times 4 = \frac{4}{16}$

$\frac{1}{4} \times 5 = \frac{5}{20}$

Q3 In each case, find two equivalent fractions by division.

a) $\frac{8}{16}$

$\frac{8}{16} \div 2 = \frac{4}{8}$

$\frac{4}{8} \div 2 = \frac{2}{4}$

$\frac{8}{16} = \frac{4}{8} = \frac{2}{4}$

d) $\frac{21}{63}$

$\frac{21}{63} \div 7 = \frac{3}{9}$

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

$\frac{21}{63} = \frac{3}{9} = \frac{1}{3}$

Q4 Fill in the blanks to make the fractions equivalent.

a) $\frac{2}{9} = \frac{\quad}{18}$

$\frac{2}{9} \times 2 = \frac{4}{18}$

d) $\frac{\quad}{5} = \frac{12}{30}$

$\frac{12}{30} \div 6 = \frac{2}{5}$

f) $\frac{3}{8} = \frac{18}{\quad}$

$\frac{3}{8} \times 6 = \frac{18}{48}$

H.W. h)

Q5 Check if the fractions are equivalent. Put a tick for equivalent and cross for not equivalent.

a) $\frac{2}{6}, \frac{4}{12}$

$\frac{2}{6}$  $\frac{4}{12}$

6 × 4 = 24

2 × 12 = 24

Since the cross-products are equal, $\frac{2}{6}$ and $\frac{4}{12}$ are equivalent.

(c) $\frac{3}{5}, \frac{15}{9}$

$\frac{3}{5}$  $\frac{15}{9}$

5 × 15 = 75

3 × 9 = 27

Since the cross-products are not equal, $\frac{3}{5}$ and $\frac{15}{9}$ are not equivalent.

(g) $\frac{5}{11}, \frac{20}{44}$

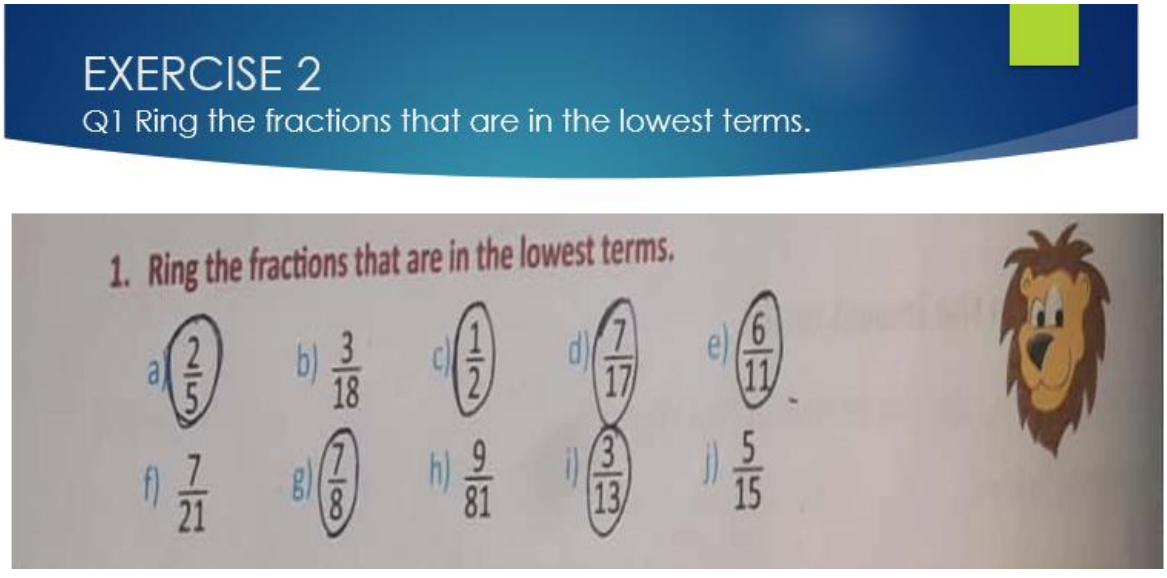
$\frac{5}{11}$  $\frac{20}{44}$

11 × 20 = 220

5 × 44 = 220

Since the cross-products are equal, $\frac{5}{11}$ and $\frac{20}{44}$ are equivalent.

H.W. (f)



Exercise 3

Q1 Compare the fractions without finding the LCM. Put <, > or = in the ◯.

a) $\frac{1}{2}$ (>) $\frac{1}{4}$ (d) $\frac{5}{11}$ (>) $\frac{5}{12}$ (f) $\frac{9}{19}$ (<) $\frac{9}{10}$ (h) $\frac{2}{3}$ (=) $\frac{4}{6}$

Q2 Compare the fractions and put <, > or = in the ◯.

a) $\frac{3}{4}$ (>) $\frac{2}{3}$

LCM of denominators 4 and 3 is 12.

3	3	4
2	1	4
2	1	2
	1	1
LCM = 3 x 2x 2		
= 12		

$\frac{3}{4} = \frac{3}{4} \times 3 = \frac{9}{12}$

$\frac{2}{3} = \frac{2}{3} \times 4 = \frac{8}{12}$

Here, $\frac{9}{12} > \frac{8}{12}$

So, $\frac{3}{4} > \frac{2}{3}$

Q2 Reduce the fractions to the lowest terms by dividing by common factors.

a) $\frac{3}{12}$

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

c) $\frac{14}{21}$

$\frac{14}{21} \div 7 = \frac{2}{3}$

h) $\frac{17}{20}$

$\frac{17}{20}$ is already in lowest term, as the fraction has common factor 1 only.

i) $\frac{7}{42}$

$\frac{7}{42} \div 7 = \frac{1}{6}$

Q3 Reduce the fractions to the lowest terms by dividing the numerator and denominator by their HCF.

a) $\frac{20}{24}$

$\frac{20}{24} \div 4 = \frac{5}{6}$

b) $\frac{14}{56}$

$\frac{14}{56} \div 14 = \frac{1}{4}$

f) $\frac{12}{42}$

$\frac{12}{42} \div 6 = \frac{2}{7}$

c) $\frac{9}{10} > \frac{3}{4}$

LCM of denominators 10 and 4 is 20.

2	10	4
2	5	2
5	5	1
	1	1
LCM = 2 x 2x 5		
= 20		

$\frac{9}{10} = \frac{9}{10} \times 2 = \frac{18}{20}$

$\frac{3}{4} = \frac{3}{4} \times 5 = \frac{15}{20}$

Here, $\frac{18}{20} > \frac{15}{20}$

So, $\frac{9}{10} > \frac{3}{4}$

h) $\frac{5}{16} < \frac{3}{8}$

LCM of denominators 16 and 8 is 16.

2	16	8	
2	8	4	
2	4	2	
2	2	1	
	1	1	
LCM = 2 x 2 x 2 x 2			
= 16			

$\frac{5}{16} = \frac{5}{16} \times 1 = \frac{5}{16}$

$\frac{3}{8} = \frac{3}{8} \times 2 = \frac{6}{16}$

Here, $\frac{5}{16} < \frac{6}{16}$

So, $\frac{5}{16} < \frac{3}{8}$

H.W. (e)

Q3 Arrange in ascending order.

a) $\frac{1}{3}, \frac{1}{4}, \frac{1}{5}$

Ans: $\frac{1}{5}, \frac{1}{4}, \frac{1}{3}$

c) $\frac{1}{2}, \frac{1}{3}, \frac{2}{3}, \frac{3}{4}$

Ans: LCM of denominators 2, 3 and 4 is 12.

2	2	3	4
2	1	3	2
3	1	3	1
	1	1	1
LCM = 2 x 2 x 3			
= 12			

$\frac{1}{2} = \frac{1}{2} \times 6 = \frac{6}{12}$

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

$\frac{2}{3} = \frac{2}{3} \times 4 = \frac{8}{12}$

$\frac{3}{4} = \frac{3}{4} \times 3 = \frac{9}{12}$

Ascending order: $\frac{4}{12}, \frac{6}{12}, \frac{8}{12}, \frac{9}{12}$

Ans: $\frac{1}{3}, \frac{1}{2}, \frac{2}{3}, \frac{3}{4}$

e) $\frac{4}{5}, \frac{9}{10}, \frac{7}{15}, \frac{2}{3}$

Ans: LCM of denominators 5, 10, 15 and 3 is 30 .

	5	5	10	15	3
	3	1	2	3	3
	2	1	2	1	1
		1	1	1	1
LCM = 5 x 3 x 2					
	= 30				

$\frac{4}{5} = \frac{4}{5} \times 6 = \frac{24}{30}$

$\frac{9}{10} = \frac{9}{10} \times 3 = \frac{27}{30}$

$\frac{7}{15} = \frac{7}{15} \times 2 = \frac{14}{30}$

$\frac{2}{3} = \frac{2}{3} \times 10 = \frac{20}{30}$

Ascending order: $\frac{14}{30}, \frac{20}{30}, \frac{24}{30}, \frac{27}{30}$

Ans: $\frac{7}{15}, \frac{2}{3}, \frac{4}{5}, \frac{9}{10}$

Q4 Arrange in descending order.

a) $\frac{9}{14}, \frac{5}{7}, \frac{11}{21}$

LCM of denominators 14, 7and 21 is 42.

	7	14	7	21
	2	2	1	3
	3	1	1	3
		1	1	1
LCM = 7 x 2 x 3				
= 42				

$\frac{9}{14} = \frac{9}{14} \times 3 = \frac{27}{42}$

$\frac{5}{7} = \frac{5}{7} \times 6 = \frac{30}{42}$

$\frac{11}{21} = \frac{11}{21} \times 2 = \frac{22}{42}$

Descending order: $\frac{30}{42}, \frac{27}{42}, \frac{22}{42}$

Ans: $\frac{5}{7}, \frac{9}{14}, \frac{11}{21}$

c) $\frac{19}{30}, \frac{2}{5}, \frac{7}{15}$

LCM of denominators 30, 5 and 15 is 30.

$\frac{19}{30} = \frac{19}{30} \times 1 = \frac{19}{30}$

$\frac{2}{5} = \frac{2}{5} \times 6 = \frac{12}{30}$

$\frac{7}{15} = \frac{7}{15} \times 2 = \frac{14}{30}$

Descending order: $\frac{19}{30}, \frac{14}{30}, \frac{12}{30}$

Ans: $\frac{19}{30}, \frac{7}{15}, \frac{2}{5}$

e) $\frac{7}{9}, \frac{7}{8}, \frac{5}{6}, \frac{11}{12}$

Ans: LCM of denominators 9, 8, 6 and 12 is 72 .

	2	9	8	6	12
	2	9	4	3	6
	2	9	2	3	3
	3	9	1	3	3
	3	3	1	1	1
		1	1	1	1
LCM = 2 x 2 x 2 x 3 x 3					
	= 72				

$\frac{7}{9} = \frac{7}{9} \times 8 = \frac{56}{72}$

$\frac{7}{8} = \frac{7}{8} \times 9 = \frac{63}{72}$

$\frac{5}{6} = \frac{5}{6} \times 12 = \frac{60}{72}$

$\frac{11}{12} = \frac{11}{12} \times 6 = \frac{66}{72}$

Descending order: $\frac{66}{72}, \frac{63}{72}, \frac{60}{72}, \frac{56}{72}$

Ans: $\frac{11}{12}, \frac{7}{8}, \frac{5}{6}, \frac{7}{9}$

H.W. (f)

5. Mohan and Sohan have the same storybook.
Mohan has read $\frac{2}{5}$ of the book and Sohan has read $\frac{2}{7}$ of the book. Who has read more pages?

Solution:

Mohan read = $\frac{2}{5}$ of the storybook

Sohan read = $\frac{2}{7}$ of the storybook

	5	5	7
	7	1	7
		1	1
LCM = 5 x 7			
	= 35		

Taking LCM of 5 and 7 is 35.

$\frac{2}{5} \times 7 = \frac{14}{35}$

$\frac{2}{7} \times 5 = \frac{10}{35}$

Here, $\frac{14}{35} > \frac{10}{35}$.

So, $\frac{2}{5} > \frac{2}{7}$

Mohan read more pages than Sohan.

Exercise 4
Q1 Add.

a) $\frac{3}{8}+\frac{1}{4}$

LCM of 8 and 4 is 8.

$\frac{3}{8}+\frac{1}{4} = \frac{3}{8}\times 1 + \frac{1}{4}\times 2$

$= \frac{3}{8}+\frac{2}{8}$

$= \frac{5}{8}$

2	8	4
2	4	2
2	2	1
	1	1
LCM = 2 x 2 x 2		
= 8		

c) $\frac{2}{3}+\frac{1}{6}$

LCM of 3 and 6 is 6.

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

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

$= \frac{5}{6}$

3	3	6
2	1	2
	1	1
LCM = 3 x 2		
= 6		

Q2 Add. Give the answer in lowest terms.

a) $\frac{1}{2}+\frac{1}{6}$

LCM of 2 and 6 is 6.

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

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

$= \frac{4}{6} \div 2$

$= \frac{2}{3}$

2	2	6
3	1	3
	1	1
LCM = 2 x 3		
= 6		

H.W.

d) $\frac{1}{5}+\frac{7}{15}$

LCM of 5 and 15 is 15.

$\frac{1}{5}+\frac{7}{15} = \frac{1}{5}\times 3 + \frac{7}{15}\times 1$

$= \frac{3}{15}+\frac{7}{15}$

$= \frac{10}{15} \div 5$

$= \frac{2}{3}$

5	5	15
3	1	3
	1	1
LCM = 5 x 3		
= 15		

Q3 Add. Give the answer as a mixed number.

a) $\frac{3}{5} + \frac{7}{10}$

LCM of 5 and 10 is 10.

$\frac{3}{5} + \frac{7}{10} = \frac{3}{5} \times 2 + \frac{7}{10} \times 1$

$= \frac{6}{10} + \frac{7}{10}$

$= \frac{13}{10}$

Mixed number $= Q\frac{R}{D}$

$= 1\frac{3}{10}$

LCM

	5	5	10
	2	1	2
		1	1
LCM = 5 x 2			
= 10			

MIXED NUMBER

		1	→ Q
D ←	10	13	
		-10	
		3	→ R

c) $\frac{2}{3} + \frac{3}{4}$

LCM of 3 and 4 is 12.

$\frac{2}{3} + \frac{3}{4} = \frac{2}{3} \times 4 + \frac{3}{4} \times 3$

$= \frac{8}{12} + \frac{9}{12}$

$= \frac{17}{12}$

Mixed number $= Q\frac{R}{D}$

$= 1\frac{5}{12}$

LCM

	3	3	4
	2	1	4
	2	1	2
		1	1
LCM = 3 x 2 x 2			
= 12			

MIXED NUMBER

		1	→ Q
D ←	12	17	
		-12	
		5	→ R

4. Upasana drinks $\frac{1}{4}$ l of milk in the morning and $\frac{2}{5}$ l of milk at night. How much milk does she drink every day?

Solution:

Quantity of milk Upasana drinks in the morning = $\frac{1}{4}$ l

Quantity of milk Upasana drinks in the evening = $\frac{2}{5}$ l

Total quantity of milk she drinks everyday =

$\frac{1}{4} + \frac{2}{5}$

LCM of 4 and 5 is 20.

$\frac{1}{4} + \frac{2}{5} = \frac{1}{4} \times 5 + \frac{2}{5} \times 4$

$= \frac{5}{20} + \frac{8}{20}$

$= \frac{13}{20}$

	5	5	4
	2	1	4
	2	1	2
		1	1
LCM = 5 x 2 x 2			
	= 20		

5. One day Akash walked $\frac{2}{3}$ km from home to school. On his return he took another route which was $\frac{3}{5}$ km long. How much did Akash walk in all?

Solution:

Akash walked from home to school = $\frac{2}{3}$ km

He took another route = $\frac{3}{5}$ km

Akash walked in all = $\frac{2}{3}$ km + $\frac{3}{5}$ km

LCM of 3 and 5 is 15.

	5	5	15
	3	1	3
		1	1
LCM = 5 x 3			
	= 15		

$\frac{2}{3}$ km + $\frac{3}{5}$ km $= \frac{2}{3} \times 5 + \frac{3}{5} \times 3$

$= \frac{10}{15} + \frac{9}{15}$

$= \frac{19}{15}$

$= 1\frac{4}{15}$

EXERCISE 5

Q1 Add.

a) $1\frac{2}{3}$, $2\frac{5}{9}$

Ans: $\frac{5}{3} + \frac{23}{9} = \frac{5}{3} \times 3 + \frac{23}{9} \times 1$

$= \frac{15}{9} + \frac{23}{9}$

$= \frac{38}{9}$

$= Q\frac{R}{D}$

$= 4\frac{2}{9}$

	3	3	9
	3	1	3
		1	1
LCM = 3 x 3			
= 9			

		4 →	Q
D ←	9	38	
		-36	
		2 →	R

d) 4 , $2\frac{1}{3}$

Ans: LCM of 3 and 1 is 3.

$= 4 + \frac{7}{3} = \frac{4}{1} \times 3 + \frac{7}{3} \times 1$

$= \frac{12}{3} + \frac{7}{3}$

$= \frac{19}{3}$

$= Q\frac{R}{D}$

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

		6 →	Q
D ←	3	19	
		-18	
		1 →	R

.....

g) $2\frac{3}{4}$, $1\frac{2}{3}$

Ans: $2\frac{3}{4} + 1\frac{2}{3} = \frac{11}{4} + \frac{5}{3}$

LCM of 4 and 3 is 12.

$\frac{11}{4} + \frac{5}{3} = \frac{11}{4} \times 3 + \frac{5}{3} \times 4$

$= \frac{33}{12} + \frac{20}{12}$

$= \frac{53}{12}$

$= Q\frac{R}{D}$

$= 4\frac{5}{12}$

H.W. (h)

	2	4	3
	2	2	3
	3	1	3
		1	1
LCM = 2 x 2 x 3			
= 12			

		4 →	Q
D ←	12	53	
		-48	
		5 →	R

3. One day there was no water in the house. Alam and Shalu brought water in buckets from a well. Alam brought $10\frac{1}{5}$ *l* and Shalu brought $6\frac{9}{10}$ *l*. How much water did they bring in all?

Solution:

Alam brought = $10\frac{1}{5}$ *l*

Shalu brought = $6\frac{9}{10}$ *l*

Total quantity of water they brought = $10\frac{1}{5}$ *l* + $6\frac{9}{10}$ *l*

$10\frac{1}{5} + 6\frac{9}{10} = \frac{51}{5} + \frac{69}{10}$

LCM of 5 and 10 is 10.

	2	5	10
	5	5	5
		1	1
LCM = 2 x 5			
= 10			

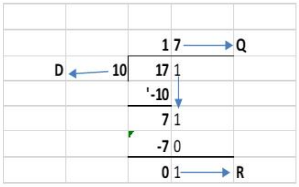
$\frac{51}{5} + \frac{69}{10} = \frac{51}{5} \times 2 + \frac{69}{10} \times 1$

$= \frac{102}{10} + \frac{69}{10}$

$= \frac{171}{10}$

$= 17\frac{1}{10}$ *l*

Ans: They brought $17\frac{1}{10}$ *l* water in all.



EXERCISE 6

Q1 Subtract:

a) $\frac{3}{4} - \frac{2}{3}$

LCM of 4 and 3 is 12.

$\frac{3}{4} - \frac{2}{3} = \frac{3}{4} \times 3 - \frac{2}{3} \times 4$

$= \frac{9}{12} - \frac{8}{12}$

$= \frac{1}{12}$

	2	4	3
	2	2	3
	3	1	3
		1	1
LCM = 2 x 2 x 3			
= 12			

d) $\frac{5}{6} - \frac{1}{4}$

$\frac{5}{6} - \frac{1}{4} = \frac{5}{6} \times 2 - \frac{1}{4} \times 3$

LCM of 6 and 4 is 12.

$= \frac{10}{12} - \frac{3}{12}$

$= \frac{7}{12}$

	2	6	4
	2	3	2
	3	3	1
		1	1
LCM = 2 x 2 x 3			
= 12			

e) $\frac{1}{3} - \frac{1}{8}$

	2	8	3
	2	4	3
	2	2	3
	3	1	3
		1	3
LCM = 2 x 2 x 2 x 3			
	= 24		

LCM of 3 and 8 is 24.

$\frac{1}{3} - \frac{1}{8} = \frac{1}{3} \times 8 - \frac{1}{8} \times 3$

$= \frac{8}{24} - \frac{3}{24}$

$= \frac{5}{24}$

Q2 Subtract:

a) $4 - 3\frac{1}{2}$

$4 - 3\frac{1}{2} = \frac{4}{1} - \frac{7}{2}$

LCM of 1 and 2 is 2.

$\frac{4}{1} - \frac{7}{2} = \frac{4}{1} \times 2 - \frac{7}{2} \times 1$

$= \frac{8}{2} - \frac{7}{2}$

$= \frac{1}{2}$

c) $5\frac{3}{8} - 2$

$5\frac{3}{8} - 2 = \frac{43}{8} - \frac{2}{1}$

LCM of 8 and 1 is 8.

$\frac{43}{8} - \frac{2}{1} = \frac{43}{8} \times 1 - \frac{2}{1} \times 8$

$= \frac{43}{8} - \frac{16}{8}$

$= \frac{27}{8}$

$= 3\frac{3}{8}$

e) $6\frac{2}{3} - 3\frac{3}{4}$

$6\frac{2}{3} - 3\frac{3}{4} = \frac{20}{3} - \frac{15}{4}$

LCM of 3 and 4 is 12.

	3	3	4
	2	1	4
	2	1	2
		1	1
LCM = 3 x 2 x 2			
= 12			

$\frac{20}{3} - \frac{15}{4} = \frac{20}{3} \times 4 - \frac{15}{4} \times 3$

$= \frac{80}{12} - \frac{45}{12}$

$= \frac{35}{12}$

$= 2\frac{11}{12}$

		2	→ Q
D ←	12	35	
		-24	
		11	→ R

H.W. (h)

3. In a long jump competition, Ballabh jumped $5\frac{3}{10}$ m. Maninder jumped $4\frac{1}{5}$ metres. How much more did Ballabh jump than Maninder?

Solution:

Ballabh jumped = $5\frac{3}{10}$ m

Maninder jumped = $4\frac{1}{5}$ m

Ballabh jumped more than Maninder by

= $5\frac{3}{10}$ m - $4\frac{1}{5}$ m

$5\frac{3}{10}$ m - $4\frac{1}{5}$ m = $\frac{53}{10}$ m - $\frac{21}{5}$ m

LCM of 5 and 10 is 10.

	2	5	10
	5	5	5
		1	1
LCM = 2 x 5			
= 10			

$\frac{53}{10}$ m - $\frac{21}{5}$ m = $\frac{53}{10} \times 1 - \frac{21}{5} \times 2$

$= \frac{53}{10} - \frac{42}{10}$

$= \frac{11}{10}$

$= 1\frac{1}{10}$ m

		1	→ Q
D ←	10	11	
		-10	
		1	→ R

Ans: Ballabh jumped $1\frac{1}{10}$ m more than Maninder.

5. Of the $4\frac{1}{2}$ *l* of milk bought in the morning, $\frac{3}{7}$ *l* was left at the end of the day. How much milk was used up?

- Solution:

Milk bought in the morning= $4\frac{1}{2}$ *l*

Milk left at the end of the day = $\frac{3}{7}$ *l*

Used up milk = $4\frac{1}{2}$ *l* - $\frac{3}{7}$ *l*

LCM of 2 and 7 is 14.

2	2	7
7	1	7
	1	1
HCF= 2 x 7		
= 14		

$4\frac{1}{2}$ *l* - $\frac{3}{7}$ *l* = $\frac{9}{2}$ *l* - $\frac{3}{7}$ *l*

$= \frac{9}{2} \times 7 - \frac{3}{7} \times 2$

$= \frac{63}{14} - \frac{6}{14}$

$= \frac{57}{14}$

$= 4\frac{1}{14}$ *l*

EXERCISE 7 TO 11 OMITTED

MENTAL MATHS (PAGE NO.84)

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

3. What is $\frac{4}{8}$ in lowest terms?

Ans: $\frac{1}{2}$

4. Arrange in ascending order: $\frac{2}{5}, \frac{2}{9}, \frac{2}{7}, \frac{2}{3}$

Ans: $\frac{2}{9}, \frac{2}{7}, \frac{2}{5}, \frac{2}{3}$

6. How many quarters are there in 4?

Ans: 16 (**4 × 4 = 16**)

19. What fraction added to $\frac{3}{5}$ makes 1?

Ans: $1 - \frac{3}{5} = \frac{5-3}{5}$

$= \frac{2}{5}$

Exploring Fractions SE-3 (10 MARKS) (TERM-2)

TO BE DONE IN MATHS LAB MANUAL

- **OBJECTIVE:** To understand various fractions and their comparison
- $\frac{2}{9}$, ____ $\frac{2}{7}$,
- $\frac{2}{5}$, ____ $\frac{2}{3}$

DELHI PUBLIC SCHOOL GANDHINAGAR

SESSION 2021-22

SUBJECT: MATHEMATICS CLASS: 5

CH: 8 GEOMETRY

Check What You Know

- Basic geometrical concepts :-
- A point is an exact location in space. It is represented by a small dot. This is a point A.

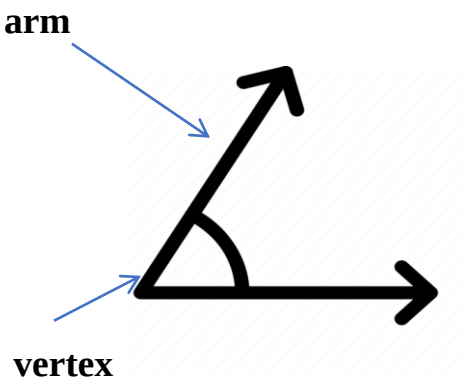
  A
- A line is a straight path that goes on endlessly on both sides. It does not have a beginning or an end. It is shown with the arrowheads on both sides.

A line segment is a part of line. It has two endpoints. This line segment has two endpoints C and D. It is called lines Segment CD or C D.

A ray is a part of line that goes on endlessly in one direction. This ray has one endpoint E. F is a point on the ray. It is called ray EF and EF.

Concepts Section :-

Angles : When two rays have a common endpoint, they form an angle.



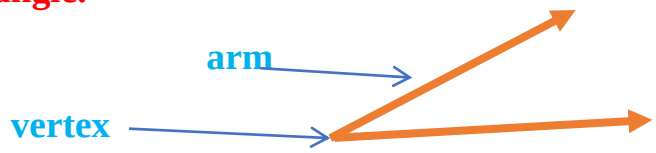
Parts of an Angle

This two rays forming an angle are called the arms of the angle. $\overrightarrow{BA}$ and $\overrightarrow{BC}$ are the arms of this angle.

The common endpoint of the rays forming an angle is called the vertex of the angle. B is the vertex of this angle.

The angle is called angle ABC or angle CBA. It is written as ∠ABC or ∠CBA.

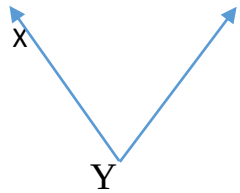
Note :- While naming an angle, the middle letter is always the vertex of the angle.



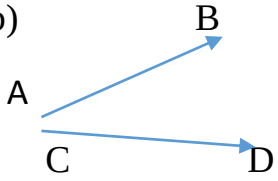
Exercise 1

1. Put a ✔ on the pairs of rays that form an angle. Name the angl.

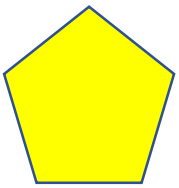
a) √ x z



b)



2. Find the number of angles in each shape.

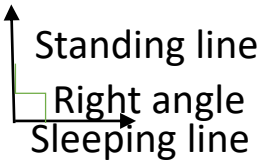
a. 5 

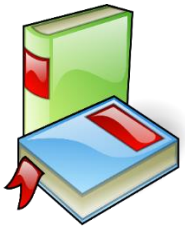
c. 8 

Types of Angles

Right Angle :-

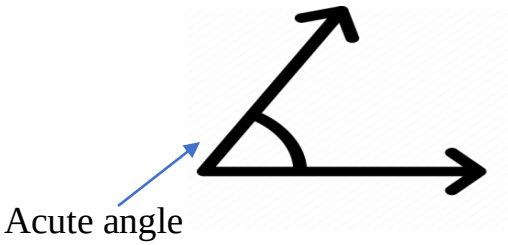
The angle made by a sleeping (horizontal) line and a standing (vertical) line is a right angle.

A right angle is marked as 



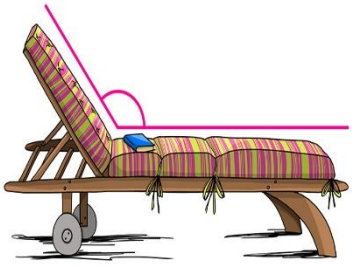
Acute Angles

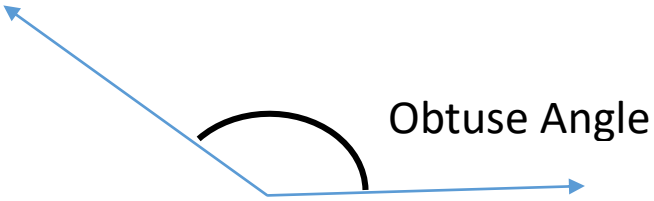
Angles less than a right angle are called acute angles.



Obtuse Angles

Angles greater than a right angle are called obtuse angles.

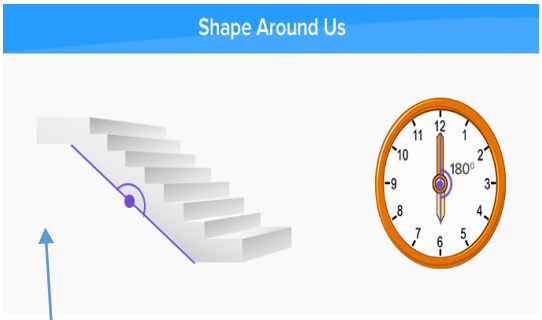


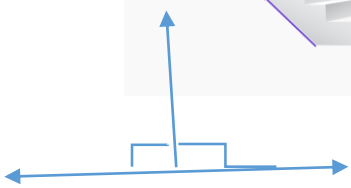


Straight Angles

Two right angles together make a straight angle.

A straight angle is made by two rays with a common endpoint, going in opposite directions.

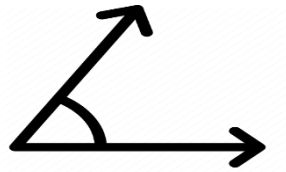




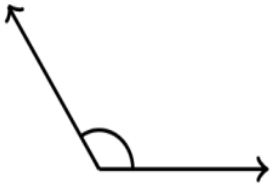
Exercise 2

1. **Identify the angles as right, acute, obtuse, or straight.**

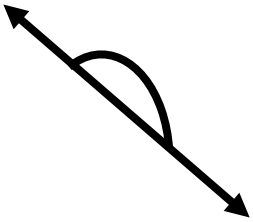
a. Acute angle



b. Obtuse angle

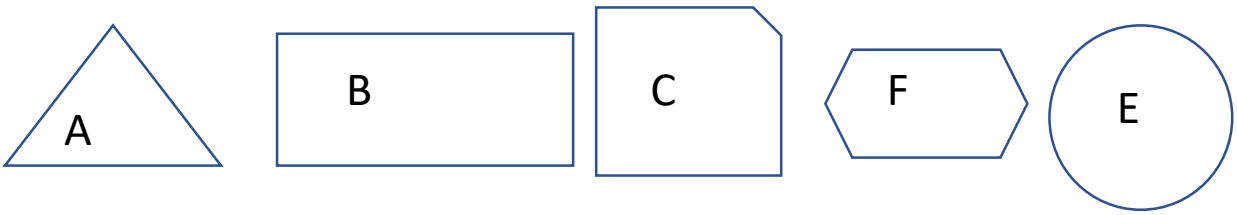


g. Straight angle



h. Right angle

2. Identify the shape being described.



a. I have 4 right angles. ___B_____

b. I have 3 acute angles. _A_____

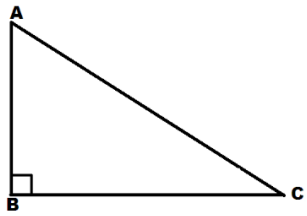
d. I have 3 right angles and 2 obtuse angles. __C_____

e. I have 6 obtuse angles. __F_____

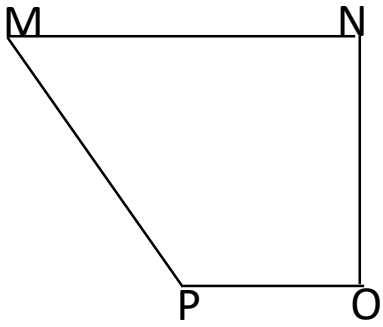
g. I have no angles. ___E_____

3. Count the number of sides and angles in each figure. Then classify each angle. Fill in the table.

a)



b)



	No. of sides	No. of Angles	Right Angles	Acute Angle	Obtuse Angle
a)	3	3	1	2	-
b)	4	4	2	1	1

Measuring Angles

Using a protractor to measure an angle

- Place the midpoint of the **protractor** on the VERTEX of the **angle**.
- Line up one side of the **angle with** the zero line of the **protractor** (where you see the number 0).
- Read the degrees where the other side crosses the number scale.

Note:

The inner scale goes from right to left.

The outer scale goes from left to right.

Drawing Angles

- Draw a straight line (i.e. an arm of the angle).
- Place a dot at one end of the arm. This dot represents the vertex of the angle.
- Place the centre of the protractor at the vertex dot and the baseline of the protractor along the arm of the angle.
- Find the required angle on the scale and then mark a small dot at the edge of the protractor.
- Join the small dot to the vertex with a ruler to form the second arm of the angle.
- Label the angle with capital letters.

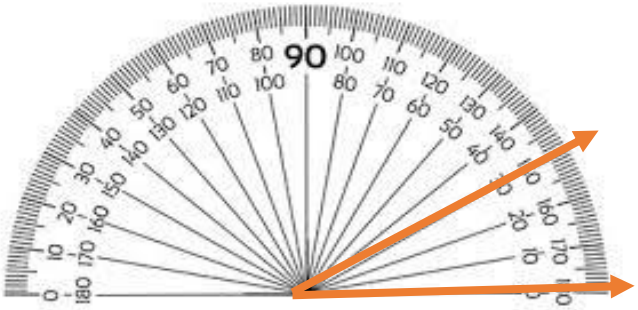
Video on drawing angle

https://www.youtube.com/watch?v=8SALBfpRwk8

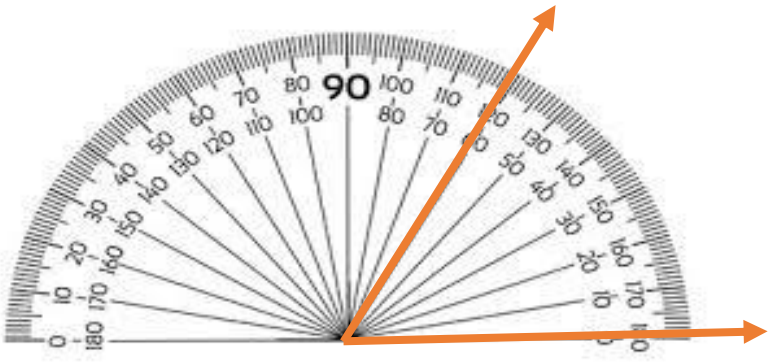
Exercise 3

1.Write the measures of each angle.

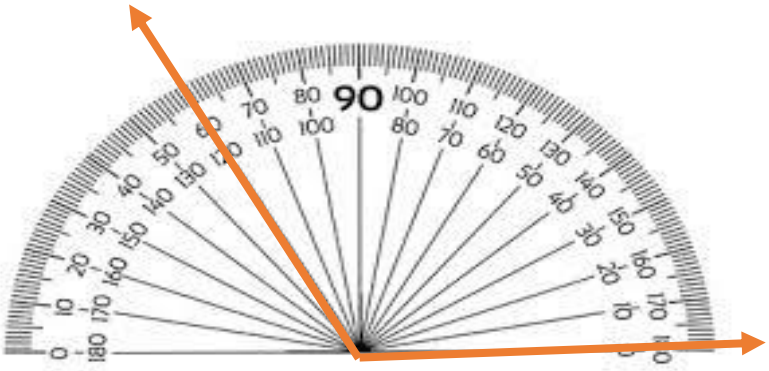
b. 30˚



b. 60˚



c. 120˚

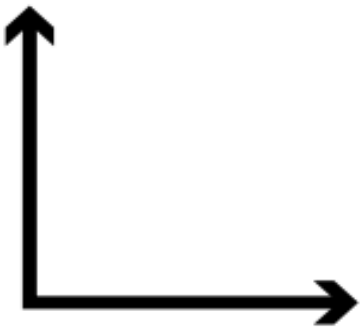


d. 150˚ HW

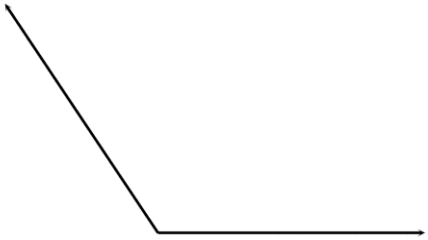
2. First guess the measure of each angle, and then measure it.

Say what type of angle each is.

a. 90˚ Right angle



b. 135˚ Obtuse angle



c. 15˚ Acute angle

d.75˚ Acute angle

3. Draw the following angles using a protractor.

a. 30˚

b. 45˚

c. 90˚

d. 60˚

e. 75˚

f. 135˚

CHAPTER- 11
Time, Speed and Temperature

Concept Section :

Conversion of Time

Bigger to Smaller Unit

1 hour = 60 minutes

To convert from hours to minutes, multiply by 60.

1 minute = 60 seconds

To convert from minutes to seconds, multiply by 60.

Exercise :1

1. Convert to minutes:

a) 7 hours

Ans: 1 hour = 60 minutes

7 hours = 7 x 60 minutes

= 420 minutes

f) 8 hours 20 minutes

Ans: 1 hour = 60 minutes

8 hours = 8 x 60 minutes

= 480 minutes

= 480 minutes + 20 minutes

8 hours 20 minutes = 500 minutes

c) $6\frac{1}{2}$ hours

6 hours + $\frac{1}{2}$ hours (30 minutes)

1 hour = 60 minutes

6 hours = 6 x 60 minutes

= 360 minutes + 30 minutes

= 390 minutes

e) 11 hours 45 minutes H.W.

Smaller to Bigger Unit

60 seconds = 1 minute

To convert from seconds to minutes,

divide by 60.

60 minutes = 1 hour

To convert from minutes to hours,

divide by 60.

2. Convert into hours and minutes.

a) 540 minutes

Ans: 60 minutes = 1 hour

540 minutes = 540 ÷ 60

= 9 hours

f) 505 minutes

Ans: 60 minutes = 1 hour

505 minutes = 505 minutes ÷ 60

= 8 hours 25 minutes

c) 240 minutes H.W

3. Convert into seconds.

d) 3 minutes 30 seconds

1 minute = 60 seconds

3 minutes = 3 x 60

= 180 seconds

180 seconds + 30 seconds

= 210 seconds

b) $10\frac{1}{2}$ minutes

10 minutes + $\frac{1}{2}$ minutes

1 minute = 60 seconds

$\frac{1}{2}$ minute = 30 seconds

10 minutes = 10 x 60

= 600 seconds

600 seconds + 30 seconds

= 630 seconds

f) 5 minutes 20 seconds H.W

4.Convert into minutes and seconds.

a) 840 seconds

60 seconds = 1 minute

840 seconds = 840 ÷ 60

= 14 minutes

e) 950 seconds

60 seconds = 1 minute

950 seconds = 950 ÷ 60

= 15 minutes 50 seconds

f) 1500 seconds H.W

Word problem

5.The Shatabdi Express stops at Gurgaon station for 150 seconds. For how many minutes and seconds does it stop?

Solution:

60 seconds = 1 minute

150 seconds = 150 ÷ 60

= 2 minutes 30 seconds

Ans: For 2 minutes 30 seconds the train stopped at Gurgaon station.

8. Gurpreet runs 1500 m in 5 minutes 43 seconds. How many seconds is that?

Solution:

1 minute = 60 seconds

5 minutes 43 seconds

5 minutes = 5 x 60

= 300 seconds

5 minutes 43 seconds = 300 seconds + 43 seconds

= 343 seconds

Ans : Gurpreet runs 1500 m in 343 seconds.

Addition and Subtraction of Time

Exercise : 2

1. Add

a) 6 h 40 min + 5 h 35 min

	hour	min
	6	4 0
+	5	3 5
	11	7 5

Now, 11h 75 min = 11h + 75 min

= 11h + 60 min + 15 min

= 11h + 1 h +15 min

= 12 h + 15 min

Ans : 12 h 15 min

d) 25 min 38 sec + 15 min 32 sec

	min	sec
	1	1
	25	38
+	15	32
	40	70

Now, 40 min 70 sec = 40 min + 70 sec

= 40 min + 60 sec + 10 sec

= 40 min + 1 min + 10 sec

= 41 min + 10 sec

Ans: 41 min 10 sec

e) 4 years 8 months + 8 years 4 months

	years	months
	4	8
+	8	4
	12	12

Now , 12 years 12 months = 12 years 12 months

= 12 years + 1 year

Ans : 13 years

2. Subtract

a) 5h 40 min – 4h 45 min

hour	min	(1h = 60 min)
4	100	(60 min + 40 min)
~~5~~	~~4~~ 0	
- 4	4 5	
0	5 5	

Ans : 55 minutes

b) 12h – 10h 10 min

hour	min	(1h = 60 min)
11	60	(60 min + 40 min)
~~12~~	~~0~~ 0	
- 10	1 0	
1	5 0	

Ans : 1 hour 50 minutes

f) 16 years – 6 years 4 months

years	months	
15	12	(1year = 12 months)
~~16~~	~~0~~ 0	
- 6	4	
9	8	

Ans: 9 years 8 months

Word problem

a) Ruchi watches two television programmes every day. She watches a cartoon programme for 45 minutes and a sports programme for 30 minutes. How much time does she spend watching television every day?

Solution: min

She watches cartoon programme = 45

She watches sports programme = + 30

Total time = 75

Now ,75 min = 60 min + 15 min

= 1 hour 15 min

Ans : She spent 1 hour 15 min in watching television every day

c) Nagma can swim 100m in 3 min 15 sec and Lata in 2 min 55 sec. Who is faster and by how many seconds?

Solution :

	min	sec
	2	75
Nagma can swim in =	~~3~~	~~15~~
Lata can swim in = -	2	55
Difference =	0	20

Ans : Lata is faster than Nagma by 20 seconds.

DELHI PUBLIC SCHOOL GANDHINAGAR

SESSION 2020-21

SUBJECT: MATHEMATICS CLASS: 5

CH: 4 FACTORS AND MULTIPLES

What are Multiples?

- A multiple of a number is exactly divisible by the number. It is obtained by multiplying the number by 1, 2, 3, 4, etc.
- 3 x 6 =18 → multiple of 3
- Factors of 18 → multiple of 6
- In 3 x 6 = 18, 18 is a multiple of 3 and 6.
- And 3 and 6 are factors of 18.

What are Factors?

- A factor of a number divides the number without leaving a remainder.
- The factors of a number can be found by multiplication or division.
- Eg: The factors of 6 by multiplication = 1, 2, 3 and 6.

- 1 x 6 = 6
- 2 x 3 = 6
- 3 x 2 = 6 **STOP**

- Eg: The factors of 6 by division = 1, 2, 3 and 6
- 6 ÷ 1 = 6
- 6 ÷ 2 = 3
- 6 ÷ 3 = 2 **STOP**

Properties of factors.

1. 1 is a factor of every number.
2. Every number is a factor of itself.
3. A factor of a number is smaller than or equal to the number.
4. The smallest factor of a number is 1.
5. The greatest factor of a number is the number itself.
6. A number has a limited number of factors. Every number has at least two factors- 1and the number itself.

Properties of multiples.

1. Every number is a multiple of 1.
2. Every number is a multiple of itself.
3. A multiple of a number is greater than or equal to the number.
4. A number has an uncountable number of multiples. There is no largest multiple of a number.

EXERCISE 1 :

1. Find the first 10 multiples of each of the following pairs of numbers. Then list the common multiples.

a) 4, 5

Ans: multiples of 4: 4, 8, 12, 16, 20, 24, 28, 32, 36, 40

multiples of 5: 5,10,15,20,25,30,35,40,45,50

common multiples of 4 and 5 are 20 and 40

b) 2, 6 (H.W)

2. Find the factors of each of the following pairs of numbers. Then list the common factors.

a) 18, 6

- Ans: Factors of 18 by division:

  18 ÷ 1 = 18

  18 ÷ 2 = 9

  18 ÷ 3 = 6

  18 ÷ 4 = Not possible

  18 ÷ 5 = Not possible

  18 ÷ 6 = 3 Stop

  Factors of 18 are: 1, 2, 3, 6, 9, 18

Factors of 6 by division:

6 ÷ 1 = 6

6 ÷ 2 = 3

6 ÷ 3 = Stop

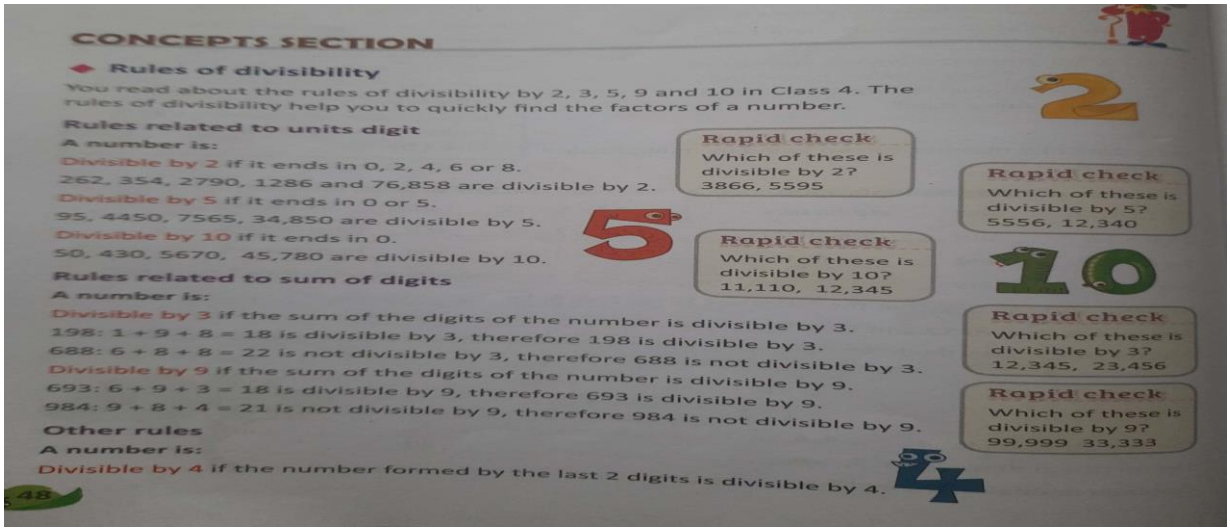
Factors of 6 are: 1, 2, 3, 6

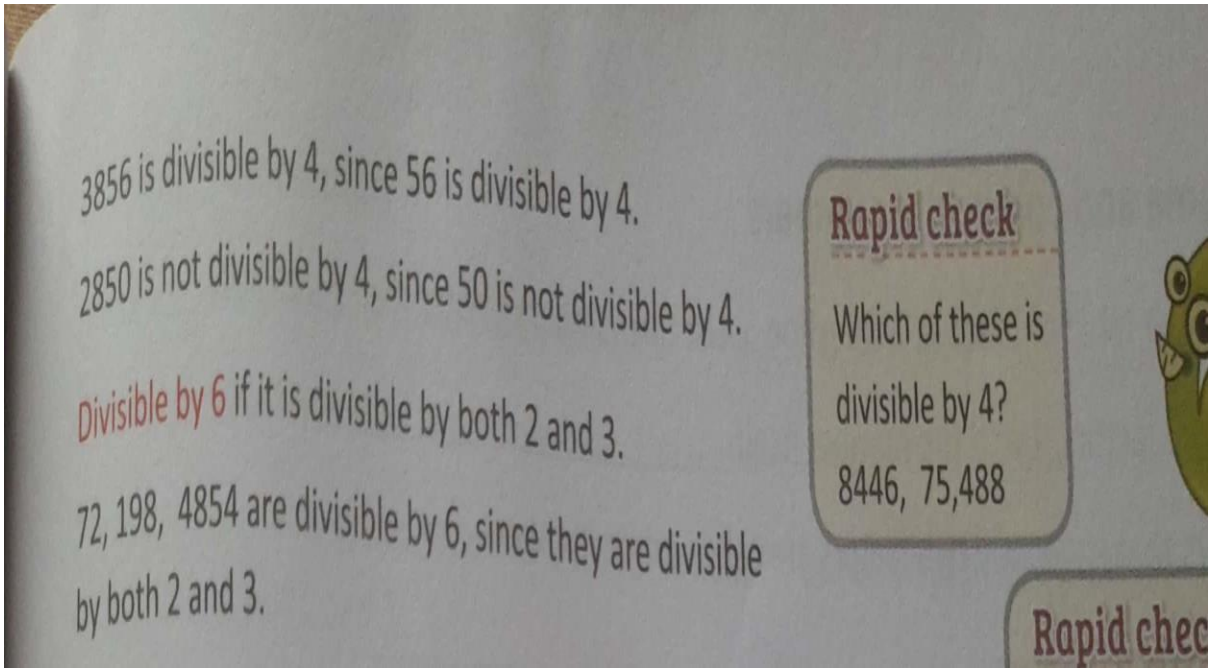
Ans: common factors of 18 and 6 are 1,2,3,6

CONCEPT SECTION

Rules of divisibility.

The rules of divisibility help to quickly find the factors of a number.





EXERCISE 2 :

1. Put a √ on the numbers that are divisible by:

a) 2: 21, 76, 123, 224, 5696

Rule: Divisible by 2- If it ends in 0,2,4,6 or 8

Ans: 76, 224, 5696

b) 5: 56, 65, 160, 745, 5551

Rule: Divisible by 5- If it ends in 0 or 5

Ans: 65, 160, 745

c) 10: 85, 108, 940, 605, 3580

Rule: Divisible by 10- If it ends in 0.

Ans: 940, 3580

2. Put a √ on the numbers that are divisible by:

a) 3: 51, 73, 127, 233, 6598

Rule: Divisible by 3- If the sum of the digits of the numbers is divisible by 3.

- 51: 5+ 1 =6

  6 is divisible by 3, therefore 51 is divisible by 3.

- 127: 1 + 2 + 7 = 10

  10 is not divisible by 3, therefore 127 is not divisible by 3.

- 6598: 6 + 5 + 9 + 8 = 28

  28 is not divisible by 3, therefore 6598 is not divisible by 3.

b) 9: 98, 123, 162, 540, 9981

Rule: Divisible by 9- If the sum of the digits of the numbers is divisible by 9.

- 98: 9 + 8 = 17

  17 is not divisible by 9, therefore 98 is not divisible by 9.

- 123: 1+2+3 =6

6 is not divisible by 9, therefore 123 is not divisible by 9.

- 9981: 9 + 9 + 8 + 1 = 27

  27 is divisible by 9, therefore 9981 is divisible by 9.

3. Put a √ on the numbers that are divisible by:

a) 4: 146, 274, 728, 904, 6500

Rule: Divisible by 4- If the number formed by the last 2 digits is divisible by 4.

146 :

46 is not divisible by 4, therefore 146 is not divisible by 4.

904:

4 is divisible by 4, therefore 904 is divisible by 4.

b) 6: 99, 124, 426, 540, 9982

Rule: Divisible by 6- If it is divisible by both 2 and 3.

99: 99 is not divisible by 2, as number at ones place is 9.

99 : 9 + 9 = 18 , 18 is divisible by 3, therefor 99 is divisible by 3.

99 is not divisible by 2 but divisible by 3.

So 99 is not divisible by 6.

426: 426 is divisible by 2 , as number at ones place is 6.

426 : 4 + 2 +6 =12 , 12 is divisible by 3, therefor 426 is divisible by 3.

426 is divisible by 2 and 3.

So 426 is divisible by 6.

4.Put √ if divisible and X if not divisible.

		Divisible by					
Number	2	3	4	5	6	9	10
a) 99	X	√	X	X	X	√	X
b) 100	√	X	√	√	X	X	√
d) 450	√	√	X	√	√	√	√
e) 702	√	√	X	X	√	√	X
g) 285 H.W							
h) 1200 H.W							

Prime and Composite Numbers.

- Numbers that have only two factors are called Prime numbers. i.e 1 and number itself.
- Numbers that have more than two factors are called Composite numbers.
- 1 is neither a prime nor a composite number. It is a unique number.

THE SIEVE OF ERATOSTHENES.

	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

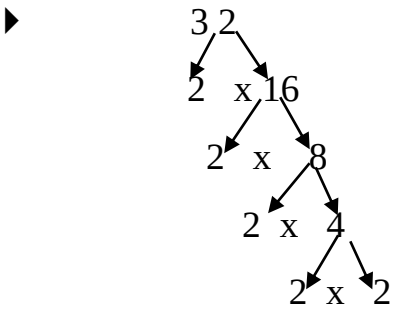
THE PRIME NUMBERS BETWEEN 1 – 100:

2 ,3, 5 ,7 ,11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97

EXERCISE 3 :

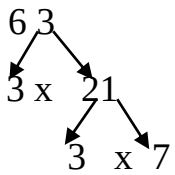
1. Find the prime factors by constructing factor trees.

a) 32



Prime Factorisation of 32 = 2 x 2 x 2 x 2 x 2

d) 63



Prime Factorisation of 63 = 3 x 3 x 7

2. Find the prime factors by division method.

- b) 75

3	75
5	25
5	5
	1

Prime Factorisation of 75 = 3 x 5 x 5

d) 28

2	28
2	14
7	7
	1

Prime Factorisation of 28 = 2 x 2 x 7

HIGHEST COMMON FACTOR (HCF)

- The HCF of two numbers is the greatest number that divides the two numbers without leaving a remainder.
- Eg. Find the HCF of 12 and 16
- The factors of 12 are : 1,2,3,4,6 and 12
- The factors of 16 are : 1,2,,4,8 and 16
- The common factors of 12 and 16 are: 1, 2 and 4.
- The highest common factors of 12 and 16 is 4. It divides both 12 and 16 without leaving a remainder.
- Coprime numbers: Two numbers ,that have only 1 as a common factor are called coprime numbers. The HCF of coprime numbers is 1.

EXERCISE 4

1. Find the common factors and the HCF.

a) 8 , 16

Factors of 8: 1, 2 , 4 , 8

Factors of 16 : 1, 2 , 4 , 8 , 16

Common factors of 8 and 16 : 1, 2 , 4 , 8

HCF: 8

2. Find the prime factors and the HCF.

a) 6 , 18

6 = 2 x 3

18 = 2 x 3 x 3

HCF = 3 x 2

= **6**

b) 9 , 15

9 = 3 x 3

15 = 5 x 3

HCF = 3

3. Find the HCF by finding all factors.

a) 20 ,30

Factors of 20 : 1, 2 , 4 , 5, 10, 20

Factors of 30 : 1,2 ,3 ,5 ,6,10,15,30

Common factors of 20 and 30 : 1,2 ,5,10

HCF: 10

d) 25, 40

Factors of 25 : 1, 5 , 25

Factor of 40 : 1,2,4,5,8,10,20,40

Common factors of 25 and 40: 1 ,5

HCF: 5

f) 22 ,33 ,44

Factors of 22 : 1, 2 , 11, 22

Factors of 33 : 1,3 ,11 ,33

Factors of 44 : 1,2 ,4,11 ,22,44

Common factors of 22 ,33 and 44 :1, 11

HCF: 11

4. Find the HCF by the prime factorisation method.

a) 10,6

2	10	6
	5	3

HCF = 2

b) 15,25

5	15	25
	3	5

HCF = 5

d) 14,22

2	**14**	**22**
	7	11

HCF = 2

g) 72,90 H.W

LOWEST COMMON MULTIPLE (LCM)

- The LCM of two numbers is the smallest number that can be divided by the two numbers without leaving a reminder.
- The LCM of coprime numbers is the product of the two numbers.

EXERCISE 5

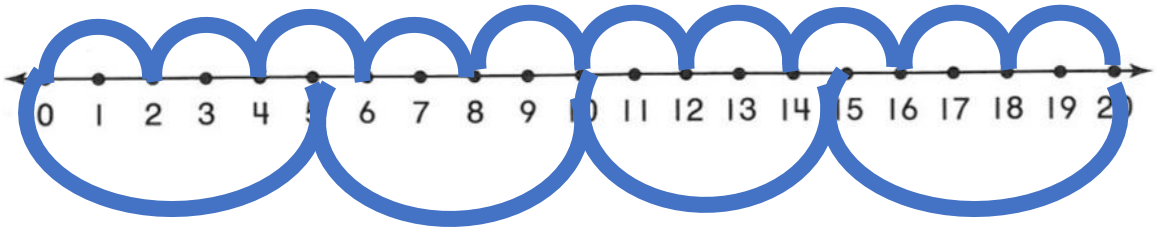
1. Find the multiples, common multiples and the LCM.

	Numbers	First 6 multiples	Common multiples	LCM
a) 3 4	3 4	3,6,9,12,15,18 4,8,12,16,20,24	12	12
c) 4 8	4 8	4,8,12,16,20,24 8,16,24,32,40,48	8, 24	8
d) 3 6	H.w			

2. Find the LCM on the numbers line.

a) 2 , 5.

Multiples of 2 are : 2,4,6,8,10,12,14,16,18,20



Multiples of 5 are: 5,10,15,20,25,30,35,40,45,50

LCM of 2 and 5 is 10

3. Find the LCM by the prime factorisation method.

c) 3,7

The prime factors of 3 : 3 x 1

The prime factors of 7 : 7 x 1

L.C.M = 3x 7 x 1 (1 is a common factor)

= 21

e) 15 ,20

The prime factors of 15 : 3 x 5

The prime factors of 20 : 2 x 2 x 5

L.C.M = 2 x 2 x 3 x 5 (5 is a common factor)

= 60

g) 30,45

The prime factors of 30 : 2 x 3 x 5

The prime factors of 45 : 3 x 3 x 5

L.C.M = 2x 3 x 3 x5 (3 and 5 are common factor)

= 90

g) 72,90 H.W

4. Find the LCM by the division method.

a) 21, 35

7	21	35
3	3	5
5	1	5
	1	1

LCM = 7 X 3 X 5
= 105

f) 12,15,40

2	12	15	40
2	6	15	20
2	3	15	10
3	3	15	5
5	1	5	5
	1	1	

LCM = 2 X 2 X 2 X 3 X 5
= 120

e) 10, 15, 18

2	10	15	18
3	5	15	9
3	5	5	3
5	5	5	1
	1	1	1

LCM = 2 X 3 X 3 X 5
= 90

DELHI PUBLIC SCHOOL, GANDHINAGAR

CLASS : 5 **SUBJECT: MATHS**

Academic Session 2021-22

CHAPTER- 3

MULTIPLICATION AND DIVISION AND THEIR APPLICATIONS

What is Multiplication?

- **Multiplication is repeated addition.**
- **The numbers that are multiplied are called factors.**
- **The answer of multiplication is called the product.**
- Example :

  2 3 factor

  X 4 factor

  9 2 product

  In 23 x 4 = 92 ,

- 23 and 4 are factors and 92 is the product
- 23 is also known as multiplier and
- 4 is also known as multiplicand.

- The answer of multiplication is called **product**.
- The symbol of multiplication is **X**

Multiplying by a 2- digit number

- **Multiply 2325 by 25**

❖ **Multiplying a 4-digit by a 2-digit number .**

- **Step 1 ; Multiply by ones.**
- **2325 x 5 = 11625**

2 3 2 5

X 2 5

1 1 6 2 5 (2325 x 5)

- **Step 2 : Multiply by tens.**
- **2325 x 20 = 46500**

2 3 2 5

X 2 0

4 6 5 0 0 (2325 x 20)

- **Step : 3 Add the products.**

11625 + 46500 =58125

2 3 2 5

X 2 5

1 1 6 2 5 (2325 x 5)

+ 4 6 5 0 0 (2325 x 20)

5 8 1 2 5 (2325 x 25)

CONCEPT SECTION

- Special case of zeros.
- Examples:

a) 125 x 100 = 12500 (add 2 zeros on the right)

b) 364 x 1000 = 364000 (add 3 zeros on the right)

c) 250 x300 = 75000 (multiply 25 by 3; add 1 + 2 = 3 zeros on the right)

d) 4300 x 4000 = 17200000 (multiply 43 by 4; add 2 +3 = 5 zeros on the right)

EXERCISE 1 :

a)
```
  3974
   X 32
  7948
+119220
 127168
```

b)
```
  3612
  X438
 28896
108360
+1444800
1582056
```

d) 3742 x 66 (H. W)

g) 8090 x 503 (H.W)

e)
```
  8406
   X 47
 58842
+336240
 395082
```

h)
```
  7009
  X709
 63081
 00000
+4906300
4969381
```

j) 540 x 100 = 54000

k) 6700 x 300 = 2010000

l) 28000 x 10 = 280000

i) 6525 x 725 (H.W)

EXERCISE 1 : WORD PROBLEM

3. One box of pencils costs ₹ 28. What is the cost of 509 boxes?

Solution :

Cost of one box of pencils = 2 8

Cost of 509 boxes of pencils = 509 x 28

= 14,252

Ans : The cost of 509 boxes of pencils is ₹ 14252

Division by 2- digit numbers

- DIVISION : Division means repeated subtraction.

7 0 4 → Quotient

- **Divisor ← 26 | 1 8 3 2 5 → Dividend**
- **Divisor : The number that we are dividing by is called divisor.**
- **Dividend: The number to be divided is called the dividend.**
- **Answer of division is called Quotient.**

Division by 2-digit numbers

- **EXERCISE 2 :**
- 1. Divide. Check your answer by multiplication.

a) 18325 ÷ 26

```
      7 0 4
   ┌─────────
26 | 1 8 3 2 5
   -   1 8 2
     ---------
       0 0 1 2 5
         -1 0 4
         -------
           0 2 1
```

Check:

Dividend = Quotient x Divisor + Remainder

= 704 x 26 + 21

= 18304 + 21

= 18325

b) 67000 ÷ 35

```
      1 9 1 4
   ┌─────────
35 | 6 7 0 0 0
   - 3 5
     -------
     3 2 0
    -3 1 5
    -------
     0 0 5 0
       - 3 5
       -----
         1 5 0
       - 1 4 0
       -------
         0 1 0
```

Check:

Dividend = Quotient x Divisor + Remainder

= 1914 x 35 + 10

= 66990 + 10

= 67000

c) 82006 ÷ 80

```
      1 0 2 5
   ┌─────────
80 | 8 2 0 0 6
   - 8 0
     -------
     0 2 0 0
      -1 6 0
      -------
```

Check:

Dividend = Quotient x Divisor + Remainder

= 1025 x 80 + 6

= 82000 + 6

= 82006

0 4 0 6

- 4 0 0

0 0 6

EXERCISE 2 : WORD PROBLEM

3. Ms. Nisha earns ₹ 97,080 in a year. What is her monthly earning?

Solution :

Ms. Nisha earns in a year = ₹ 97,080

Ms. Nisha earns in a month = ₹ 97,080 ÷ 12

```
      8 0 9 0
   ___________
12 | 9 7 0 8 0
   - 9 6
   -------
     0 1 0
     - 0
     -----
       1 0 8
     - 1 0 8
     -------
       0 0 0 0
     -       0
     ---------
             0
```

Ans: Ms. Nisha earns ₹ 8090 in a month.

AVERAGES

- **Average = $\frac{\text{Sum of quantities}}{\text{Number of quantities}}$**
- **The average will always lie between the smallest and greatest quantities in the group.**

EXERCISE 2 :

- 1. Find the average of these sets of numbers.
- b) 10, 14, 22, 6, 18

Solution :

Average = **Sum of quantities**

Number of quantities

- Average = $\frac{10 + 14 + 22 + 6 + 18}{5}$

Average = $\frac{70}{5}$

Average = 14

e) 34cm, 24cm, 30cm, 22cm, 10cm

Solution :

Average = **Sum of quantities**

Number of quantities

Average = $\frac{34\text{ cm} + 24\text{ cm} + 30\text{ cm} + 22\text{ cm} + 10\text{ cm}}{5}$

Average = $\frac{1\,2\,0\text{ cm}}{5}$

Average = 24 cm

2. Find the average of the first 9 counting numbers.

Solution :

Average = **Sum of quantities**

Number of quantities

Average = $\frac{1+2+3+4+5+6+7+8+9}{9}$

Average = $\frac{45}{9}$

Average = 5

4. The average daily expense of the Vaidya family is ₹ 1454.How much do they spend in a week?

Solution :

Average daily expense of the Vaidya family = ₹ 1454

In a week they spend = ₹ 1454 x 7

= ₹ 10,178

Ans : They spend ₹ 10,178 in a week.

5. The height of 6 friends in class: 150cm, 155cm, 140cm, 150cm, 145cm, 140cm.

a) Find the average height.

Solution:

Average = $\frac{\textbf{Sum of quantities}}{\textbf{Number of quantities}}$

Average = $\frac{150cm + 155cm + 140cm + 150cm + 145cm + 140cm}{6}$

Average = $\frac{880\ cm}{6}$

Average = 146.66 cm

b) How many children are taller than the average height? How many children are shorter than the average height?

Solution :

3 children are taller than the average height.

3 children are shorter than the average height.

UNITARY METHOD

- Unitary method: This method of first finding the value of one by dividing, and then the value of many by multiplying is called the **unitary method.**
- Given the cost of 10 items, we can find the cost of 1 item by dividing by 10.
- Given the cost of 1 item, we can find the cost of 10 items by multiplying by 10

EXERCISE 4:

1. The price of a dozen notebooks is ₹ 144. Find the cost of 20 notebooks.

Solution :

1 dozen = 12 items

The price of a dozen notebooks = ₹ 144

The price of a 1 notebook = ₹ 144 ÷ 12

= ₹ 12

The price of a 1 notebook = ₹ 12

The price of a 20 notebooks = ₹ 12 x 20

= ₹ 240

Ans : The cost of 20 notebooks is ₹ 240.

2.18 buses can carry 918 passengers. How many passengers can 25 buses carry?

Solution :

Passengers in 18 buses = 918

Passengers in 1 bus = 918 ÷ 18

= 51

Passengers in 1 bus = 51

Passengers in 25 buses = 51 x 25

= 1275

Ans : 25 buses can carry 1275 passengers.

3. 25 bags of sugar weigh 725kg. How much do15 bags weigh?

Solution :

25 bags of sugar weigh = 725 kg

1 bag of sugar weigh = 725 kg ÷ 25

= 29 kg

1 bag of sugar weigh = 29 kg

15 bags of sugar weigh = 29 kg x 15

= 435kg

Ans: 15 bags of sugar weigh 435kg.

5. The cost of a box of 24 eggs is ₹ 120. What is the cost of 6 eggs?

Solution :

The cost of 24 eggs = ₹ 120

The cost of 1 egg = ₹ 120 ÷ 24

= ₹ 5

The cost of 1 egg = ₹ 5

The cost of 6 eggs = ₹ 5 x 6

= ₹ 30

Ans: The cost of 6 eggs is ₹ 30

DELHI PUBLIC SCHOOL, GANDHINAGAR

CLASS : 5 **SUBJECT: MATHS**

Academic Session 2021-22

CHAPTER- 2

Addition and Subtraction and Their Applications

EXERCISE 2

Q-1 Find the profit or loss:

a) C.P.= ₹ 648

S.P. =₹ 695

HERE, S.P.(PRICE AT WHICH ITEM IS SOLD) › C.P.(PRICE AT WHICH ITEM IS BOUGHT)

so, PROFIT = S.P. – C.P.

= ₹695-648

= ₹47

d) C.P.= ₹ 150
Cost of repair= ₹ 45
S.P.= ₹ 245

C.P.= ₹ 150

Total C.P. = C.P. + overheads

= ₹ 150 + ₹45

= ₹195

S.P. = ₹ 245

Here, C.P. > S.P. So, it is profit.

Profit = S.P. – C.P.

= ₹245 - ₹ 195

= ₹ 50

Q-2 Find the profit or loss.

b) C.P. = ₹ 59.50
S.P. = 52.95

Here, C.P. > S.P.

So, loss = C.P. – S.P.

= ₹59.50 - ₹52.95

= ₹6.55

c) C.P. = ₹ 20,445
S.P.= ₹19,995

Here, C.P. > S.P.

So, loss = C.P. – S.P.

= ₹ 20,445 - ₹ 19,995

= ₹ 450

Q-3 Find the profit or loss.

a) C.P. = ₹ 20.75

Overheads = ₹ 2.75

S.P. = ₹ 25

Total C.P. = C.P. + overheads

= ₹ 20.75 + ₹ 2.75

= ₹ 23.50

S.P. = ₹ 25

Here, S.P. > C.P So, Profit = S.P. – C.P.

= ₹ 25.00 - ₹ 23.50

= ₹ 1.50

c) C.P. = ₹ 12,500

Overheads = ₹ 1000

S.P. = ₹ 13,595

Total C.P. = ₹ C.P. + overheads

= ₹ 12,500 + ₹ 1000

= ₹ 13,500

S.P. = ₹ 13,595

Here, S.P.> C.P So, it is profit.

Profit = S.P. – C.P.

= ₹ 13,595 - ₹ 13,500

= ₹ 95

Q-4 Balan bought a music system for ₹ 7,500.He did not like it and sold it for ₹ 6,995. Did he make Profit or Loss? How much?

Here, C.P. = ₹ 7,500
S.P. = ₹ 6,995

C.P.> S.P So, he made loss.
Loss = C.P. – S.P.
= ₹ 7500 - 6995
= ₹ 505
He made Loss of ₹ 505

Q-5 Peter bought a plot of land for ₹ 75,000.He spent ₹ 35,000 on building a boundary wall around the plot.He then sold the land for ₹ 1,50,000. Find his profit or loss.

C.P. = ₹ 75,000
Overheads = ₹ 35,000
S.P. = ₹ 1,50,000
Total C.P. = ₹ C.P. + overheads
= ₹ 75,000 + 35,000
= ₹ 1,10,000
S.P. = ₹ 1,50,000
Here, S.P.> C.P
So, Profit = S.P. – C.P.
= ₹ 1,50,000 – ₹ 1,10,000
= ₹ 40,000
Peter make profit of ₹ 40,000

Exercise 3

Q.1 Find the selling price or cost price as required.

a) C.P. = ₹ 4680

Profit = ₹ 695

S.P. = C.P. + profit

= ₹ 4680 + ₹ 695

= ₹ 5375

C.P= ₹ 4680	**Profit = ₹ 695**
S.P. ?	

c) S.P. = ₹ 6445

Loss = ₹ 395

C.P.= S.P. + Loss

= ₹ 6445 + ₹ 395

= ₹ 6840

Q2.Find the selling price.

C.P. ?	
S.P = ₹ 6445	**Loss = ₹ 395**

	C.P.	Profit	Loss	S.P.
a)	₹ 85.00	₹ 15.50	-	
b)	₹ 122.95	-	₹ 13.50	
c)	₹ 23,695	-	₹ 1550	
d)	₹ 99,995	₹ 25,005	-	

a) C.P. = ₹ 85.00

Profit = ₹ 15.50

Loss = ---

S.P. = ?

S.P. = C.P. + profit

= ₹ 85.00 + ₹ 15.50

= ₹ 100.50

c) C.P. = ₹ 23,695

Profit = ---

Loss = ₹ 1550

S.P. = ?

S.P. = C.P. - Loss

= ₹ 23,695 - ₹ 1550

= ₹ 22,145

Q3.Find the cost price.

	S.P.	Profit	Loss	C.P.
a)	₹ 125.25	₹ 24.70	-	
b)	₹ 559.50	-	₹ 52.51	
c)	₹ 52,500	-	₹ 3540	
d)	₹ 10,450	₹ 685	-	

a) S.P. = ₹ 125.25

Profit = ₹ 24.70

Loss = ---

C.P. = ?

C.P. = S.P. - Profit

= ₹ 125.25 - ₹ 24.70

= ₹ 100.55

c) S.P. = ₹ 52,500

Profit = ---

Loss = ₹ 3540

C.P. = ?

C.P. = S.P. + Loss

= ₹ 52,500 + ₹ 3540

= ₹ 56,040

4. **Anju lost** ₹ 2300 on a sofa set that she sold for ₹ 34,455. At what price did she buy the sofa set?

Solution:

Loss Anju incurred on sofa set = ₹ 2,300

S.P. of sofa set = ₹ 34,455

C.P. of sofa set = ?

C.P. = S.P. + Loss

= ₹ 34,455 + ₹ 2,300

= ₹ 36,755

Ans: Anju bought the sofa set for ₹ 36,755.

6. Salma bought a dozen cricket balls for ₹ 1550. She wants to make a profit of ₹ 550 on them. At what price should she sell the balls?

Solution:

C.P. of dozen cricket balls = ₹ 1,550

Profit = ₹ 550

S.P. of cricket balls = ?

S.P. = C.P. + profit

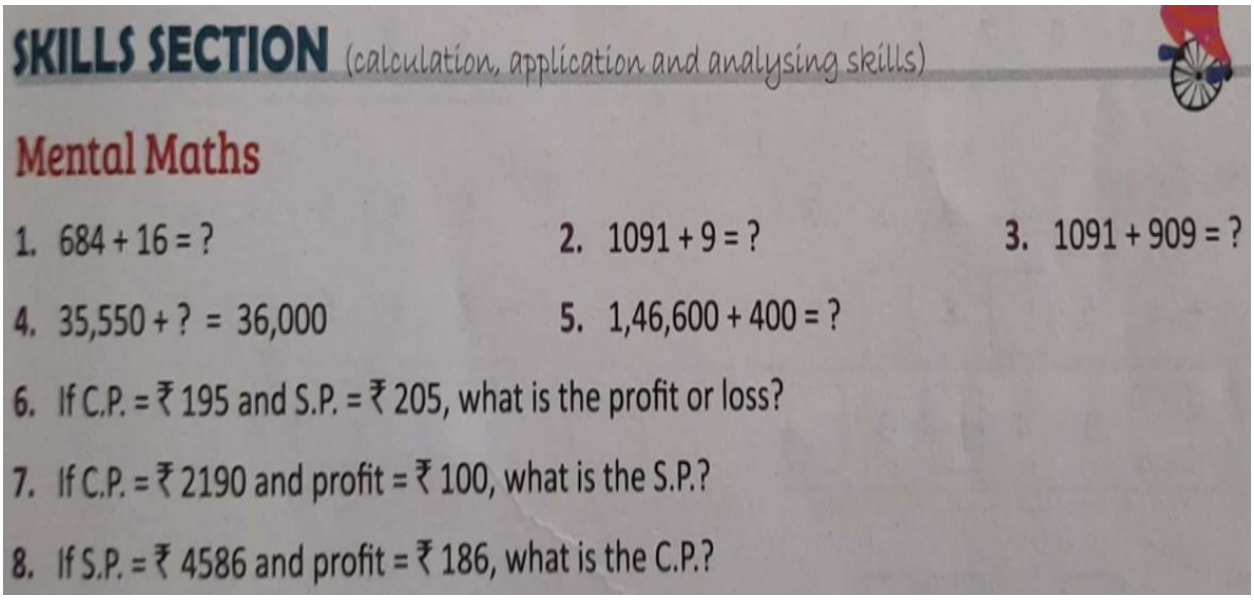
= ₹ 1,550 + ₹ 550

= ₹ 2,100 for 12 balls (dozen balls)

Profit for 1 ball = ` 2100 ÷ 12

= ₹ 175

Ans: Salma should sell each ball at ₹ 175.



SKILLS SECTION (calculation, application and analysing skills)

Mental Maths

1. 684 + 16 = ?
2. 1091 + 9 = ?
3. 1091 + 909 = ?
4. 35,550 + ? = 36,000
5. 1,46,600 + 400 = ?
6. If C.P. = ₹ 195 and S.P. = ₹ 205, what is the profit or loss?
7. If C.P. = ₹ 2190 and profit = ₹ 100, what is the S.P.?
8. If S.P. = ₹ 4586 and profit = ₹ 186, what is the C.P.?

MENTAL MATHS (ANSWERS)

1. 700
2. 1,100
3. 2,000
4. 450
5. 1,47,000
6. Profit; ₹ 10
7. ₹ 2,290
8. ₹ 4,400

TEST

Q.1. Write the formulas of:

(a) Profit

(b) Loss

(c) C.P. when S.P. and loss are given.

(d) C.P. when S.P. and profit are given.

(e) S.P. when C.P. and loss are given.

(f) S.P. when C.P. and profit are given.

MENTAL MATHS (ANSWERS)

1. 700
2. 1,100
3. 2,000
4. 450
5. 1,47,000
6. Profit; ₹ 10
7. ₹ 2,290
8. ₹ 4,400

SE ACTIVITY- 1 (TO BE DONE IN ONLINE CLASS WITH THE SUBJECT TEACHER IN MATHS LAB MANUAL)

Forming Numbers

OBJECTIVE:

To form 5-digit, 6-digit and 7-digit numbers using number cards and compare them

PRE-REQUISITE KNOWLEDGE:

(I) Formation of numbers

(ii) Place value chart

MATERIALS REQUIRED:

(i) Number cards of seven different digits : 2, 3,0,5,7,9 and 4

(ii) Symbol cards of greater and lesser value that is > and <

PROCEDURE:

1. **Take five card at a time to form 5-digit numbers. i.e. 20345 , 20347 etc**
2. **Take six cards at a time to form 6-digit numbers. i.e. 203457 , 203479 etc**
3. **Take seven cards at a time to form 7-digit numbers. i.e. 9754320 , 9574320 ,etc**
4. **Compare the numbers, when numbers of digits are same.**
5. **Place 5-digit and 6-digit numbers in ascending and descending orders using symbol cards.**
6. **Write place values of the different digits in the numbers using the place-value chart and compare them.**

OBSERVATION:

1. **The smallest number so formed using the digits 2,3,0,4,5,7,9 is 2034579.**
2. **The largest number so formed using the digits 2,3,0,4,5,7,9 is 9754320.**

3. Comparison of numbers having different number of digits:

Compare the numbers having different number of digits using symbol Cards. For example: 2043579 > 2 03457, 957432 < 9754320 etc

4. Comparison of numbers having same number of digits:

Compare the numbers having same number of digits using symbol Cards. For example : 203547 < 204357 , 975432 > 957432 etc.

5. Ordering of the numbers: For example:

The 6-digit numbers in ascending order are :

203547 < 204357 < 957432 < 975432

		6-digit numbers
Ascending order		
Descending order		

6. Place values of the digits in the numbers:

For example: In the number 957432,

The place value of 9 = 900000.

The place value of 5=50000.

The place value of 7=7000.

The place value of 4=400

The place value of 3=30

The place value of 2=2

Also, 900000 >50000 >7000 > 400 >30 >2 .

T TH	TH	H	T	O

CONCLUSION:

Students learn how to form numbers and compare them using number and symbol cards.

RUBRIC:

- **Forming smallest number using given digits: 1 M**
- **Forming greatest number using given digits: 1 M**
- **Arranging in ascending order: 2 M**
- **Comparing any two numbers: 1 M**

AIL : 1

- **TO GIVE CHILDERN THE PRACTICAL EXPERIENCE OF PROFIT AND LOSS.**

OBJECTIVE:

- **TO GIVE CHILDERN THE PRACTICAL EXPERIENCE OF PROFIT AND LOSS.**

PROCEDURE:

- **Children will go any shop.**
- **They note down the prices of any 5 items.**
- **Find out from the shopkeeper the prices at which he had bought them.**
- **Calculate the shopkeeper's profit or loss on each item.**

RUBRIC:

- **To find out total of all items: 1 M**

- **To find out profit: = 2 M**
- **To find out Loss: = 2 M**

DELHI PUBLIC SCHOOL, GANDHINAGAR

CLASS : 5 **SUBJECT: MATHS**

Academic Session 2021-22

CHAPTER- 1

LARGE NUMBERS

Recapitulation

- Which is the greatest 6-digit number?

  Ans: 9,99,999
- How do you read this greatest 6-digit number?
- Ans: Nine lakh ninety nine thousand nine hundred ninety nine
- Write the expanded notation for the greatest 6-digit number.
- Ans: 9,00,000 + 90,000 + 9,000 + 900 + 90 + 9
- Use the digits 1, 4, 0, 9, 7, 2 to build the greatest and smallest 6-digit number.
- Ans: Greatest number : 9,74,210

  Smallest number: 1,02,479

7-digit numbers

9,99,999 + 1 = 10,00,000. It is the smallest 7-digit number and read as 10 lakh.

TL	L	TTH	TH	H	T	O
	1	1	1	1	1	
	9	9	9	9	9	9
+						1
1	0	0	0	0	0	0

10,00,000 is the smallest 7-digit number. It is read as 10 lakh.

INDIAN PLACE-VALUE CHART

Lakhs Period		Thousands Period		Ones Period		
Ten Lakhs	Lakhs	Ten Thousands	Thousands	Hundreds	Tens	Ones
1	0	0	0	0	0	0

- The new place value added is **ten lakhs**. It is in the lakhs period.

Reading of 7-digit numbers and expanded form

46,78,904 is read as Forty six lakh, seventy eight thousand, nine hundred four

Expanded form:

40,00,000 + 6,00,000 + 70,000 + 8,000 + 900 + 0 + 4

Exercise 1

Q.1 Write the number names and the expanded forms.

a) 23,89,009

Ans: Twenty three lakh eighty nine thousand nine

Expanded form = 20,00,000 + 3,00,000 + 80,000 + 9,000 + 0 + 0 + 9

b) 56,32,123

Ans: Fifty six lakh thirty two thousand one hundred twenty three

Expanded form = 50,00,000 + 6,00,000 + 30,000 + 2,000 + 100 + 20 +3

Q.2 Write the numbers and the expanded forms.

Q.2 Write the numbers and the expanded forms.

a) Fifty lakh sixty-six thousand nine hundred ten

Ans: 50,66,910

50,00,000 + 0 + 60,000 + 6,000 + 900 + 10 + 0

b) Thirty-two lakh five thousand ninety-three

Ans: 32,05,093

30,00,000 + 2,00,000 + 0 + 5,000 + 0 + 90 +3

c) Seventy-eight lakh fifty thousand

Ans: 78,50,000

70,00,000 + 8,00,000 + 50,000 + 0 + 0 + 0

Q.3 Which is the greatest 7-digit number? Show it on a place value chart.

The greatest 7 - digit number is 99,99,999. The place value chart is given below:

T L	L	T TH	TH	H	T	O
9	9,	9	9,	9	9	9

TEST (4 marks)

- Q.1 Write the number name: (2 marks)
- a) 40,35,200
- Q.2 Write the numeral and the expanded form: (2 marks)

  a) Thirty two lakh sixty nine thousand eleven

8-digit numbers

Crores Period	Lakhs Period		Thousands Period		Ones Period		
Crores	Ten Lakhs	Lakhs	Ten Thousands	Thousands	Hundreds	Tens	Ones
1	0	0	0	0	0	0	0

99,99,999 + 1 = 1,00,00,000

C	TL	L	TTH	TH	H	T	O
	9	9	9	9	9	9	9
+							1
1	0	0	0	0	0	0	0

The new place value added is crores. It is in the crores period.

Reading of 8-digit numbers and expanded form

5,21,34,678 is read as Five crore, twenty-one lakh, thirty-four thousand, six hundred seventy-eight

Expanded form:

5,00,00,000 + 20,00,000 + 1,00,000 + 30,000 + 4,000 + 600 + 70 + 8

Exercise 2

Q.1 Write the number names and the expanded forms.

a)

C	TL	L	T TH	TH	H	T	O
8,	7	6,	8	9,	1	2	9

Ans: Eight crore seventy-six lakh eighty-nine thousand one hundred twenty-nine

Expanded form: 8,00,00,000 + 70,00,000 + 6,00,000 + 80,000 + 9,000 +100 + 20 + 9

c)

C	TL	L	T TH	TH	H	T	O
5,	2	0,	5	2,	0	6	0

Ans: Five crore twenty lakh fifty-two thousand sixty

Expanded form: 5,00,00,000 + 20,00,000 + 0 + 50,000 + 2,000 +0 + 60 + 0

Q.2 Write the numbers and the expanded forms.

a) Six crore fifty-five lakh sixty thousand eight hundred eight

C	TL	L	T TH	TH	H	T	O
6,	5	5,	6	0,	8	0	8

Expanded form : 6,00,00,000 + 50,00,000 + 5,00,000 + 60,000 +0 + 800 + 0 + 8

b) One crore one lakh one hundred one

C	TL	L	T TH	Th	H	T	O
1	0	1	0	0	1	0	1

Expanded form : 1,00,00,000 + 1,00,000 + 0 + 100 + 1

Q.3 Which is the greatest 8-digit number? Show it on a place value chart.

The greatest 8- digit number is 9,99,99,999. The place value chart is given below:

C	TL	L	T TH	TH	H	T	O
9,	9	9,	9	9,	9	9	9

Exercise 3

Q.1 Compare the numbers. Fill in the blanks with >, < or

a) 86,32,489 _<__ 1,32,00,123

c) 7,54,68,788 _<__ 7,54,86,788

d) 2,50,40,302 ≥ 2,50,40,203

Q.2 Write the number before.

a) 34,63,482

Ans : 3463482 – 1 = 34,63,481

b) 10,00,000

Ans : 10,00,000 -1 = 9,99,999

Q.3 Write the number after.

a) 96,82,545

96,82,545 + 1 = 96,82,546

b) 99,99,099

99,99,099 + 1 = 99,99,100

Q.4 Arrange in ascending order.

a) 18,18,745 81,18,745 1,18,81,745 8,08,745

Ans: 8,08,745 18,18,745 81,18,745 1,18,81,745

b) 1,22,22,622 22,26,222 22,62,222 1,22,26,222

Ans : 22,26,222 22,62,222 1,22,22,622 1,22,26,222

Q.5 Arrange in descending order.

a) 6,78,09,234 , 6,87, 09, 234 , 6,87, 90, 234 , 6, 78, 90, 234

Ans: 6,87, 90, 234 , 6,87, 09, 234 6, 78, 90, 234 6,78,09,234

b) 1,32,48,131 2,32,45,234 1,32,58,214 2,33,98,789

Ans : 2,33,98,789 2,32,45,234 1,32,58,214 1,32,48,131

Q.6 Make the smallest and greatest 7-digit numbers, without repeating digits.

a) 3, 4, 9, 1, 2, 5, 6

Ans: Greatest 7-digit number: 96,54,321

Smallest 7-digit number: 12,34,569

Q.7 Make the smallest and greatest 8-digit numbers, by repeating digits as required.

a) 1, 9, 4, 5, 6, 7

Ans: Greatest 8-digit number: 9,99,76,541

Smallest 8-digit number: 1,11,45,679

International Place value system

Place Value Chart								
Millons			Thousands			Ones		
Hundred Million	Ten Million	Million	Hundred Thousands	Ten Thousands	Thousands	Hundred	Tens	Ones
100,000,000	10,000,000	1,000,000	100,000	10,000	1,000	100	10	1

Exercise 4

Q.1 Write these numbers in figures and words in the Indian and international system.

a) 369512

Ans: **Indian number system** :

L	T TH	TH	H	T	0
3	6	9	5	1	2

In words: Three lakh sixty nine thousand five hundred twelve

International system :

H TH	T TH	TH	H	T	0
3	6	9	5	1	2

In words: Three hundred sixty nine thousand five hundred twelve

d) 60032051

Indian number system :

C	T L	L	T TH	TH	H	T	O
6	0	0	3	2	0	5	1

In words: Six crore thirty two thousand Fifty one

International system :

T M	M	H TH	T TH	TH	H	T	O
6	0	0	3	2	0	5	1

In words: Sixty million thirty two thousand fifty one

Q.2 Census (counting of population) in India was done in 2011. The populations of some states of India in 2011 were as follows. Write the population numbers in words.

a) West Bengal: 91,276,115

Ans: Ninety-one million two hundred seventy-six thousand one hundred fifteen

d) Delhi: 1,67,87,941

Ans: One crore sixty-seven lakh eighty-seven thousand nine hundred forty-one

Q.3 Write the following 2011 census state populations in figures.

a) Punjab: Twenty-seven million seven hundred forty-three thousand three hundred thirty-eight

Ans: 27,743,338

c) Kerala: Thirty-three million four hundred six thousand sixty-one

Ans: 33,406,061

d) Meghalaya: Twenty nine lakh sixty six thousand eight hundred eighty-nine

Ans **29, 66, 889**

Q.4 Give the place value of the digit in red, in both the Indian and international systems.

a) 321650

Indian number system

L	T TH	TH	H	T	O
3	2	1	6	5	0

3 lakhs or 3,00,000

International number system

H TH	T TH	TH	H	T	O
3	2	1	6	5	0

3 hundred thousand or 300,000

c) 70453271

Indian number system

C	TL	L	T TH	TH	H	T	O
5	6	4	0	9	2	7	4

4,00,000 Lakh

International number system

TM	M	H TH	T TH	TH	H	T	O
5	6	4	0	9	2	7	4

4 hundred thousand or 400,000

Rounding numbers

Rounding to the nearest 10

To round a number to the nearest 10, find which multiple of 10 the number is closest to.

Rounding to the nearest 100

To round a number to the nearest 100, find which multiple of 100 the number is closest to.

Rounding to the nearest 1000

To round a number to the nearest 1000, find which multiple of 1000 the number is closest to.

Exercise 5

Q.1 Round to the nearest 10.

a) 263

Here, 3 < 5

263 is rounded to 260

c) 24,666

Here, 6 > 5

24,666 is rounded to 24,670

d) 12,007

Here, 0 < 7

12,007 is rounded to 12,010

Q.2 Round to the nearest 100.

a) 687

Here, 8 > 5

687 is rounded to 700

c) 24,550

Here, 0 < 5

24,550 is rounded to 24,600

e) 99

099 Here, 9 > 5

99 is rounded to 100

Q.3 Round to the nearest 1000.

a) 6592

Here, 5 = 5

6592 is rounded to 7,000

c) 26,438

Here, 4 < 5

26,438 is rounded to 26,000

d) 9,999

Here, 9 > 5

9,999 is rounded to 10,000

Q.4 48,653 people saw the cricket match between India and Srilanka.

Round the number to the nearest 100 for a newspaper headline.

Ans: Round 48,653 to the nearest 100

48,653

Here, 5 = 5

48,653 is rounded to 48,700

Exercise 6

Q.1 Write the Hindu-Arabic numerals for:

a) XXXIX = 10 + 10 + 10 + 9 = 39

b) LX = 50 + 10 = 60

e) LXV = 50 + 10 + 5 = 65

g) LXXX = 50 + 10 + 10 + 10 = 80

i) LVII = 50 + 7 = 57

j) XCVIII = 90 + 8 = 98

Q.2 Write the Roman numerals for:

a) 45 = 40 + 5 = XLV

c) 63 = 50 + 10 + 3 = LXIII

e)72 = 50 +10 + 10 + 2 = LXXII

g) 84 = 50 + 10 + 10 + 10 + 4 = LXXXIV

h) 89 = 50 + 10 + 10 + 10 + 9 = LXXXIX

j) 99 = 90 + 9 = XCIX

Mental Maths

1. What is 1 less than 4,00,00,000?

Ans: 4,00,00,000 – 1 = 3,99,99,999

2. What is 499 rounded to the nearest 1000?

Ans: 0

3. What is the successor of the greatest 7-digit number?

Ans: 99,99,999 + 1 = 1,00,00,000 (One crore)

4. How many lakhs equal to 1 million?

Ans: Ten lakhs equal to million.

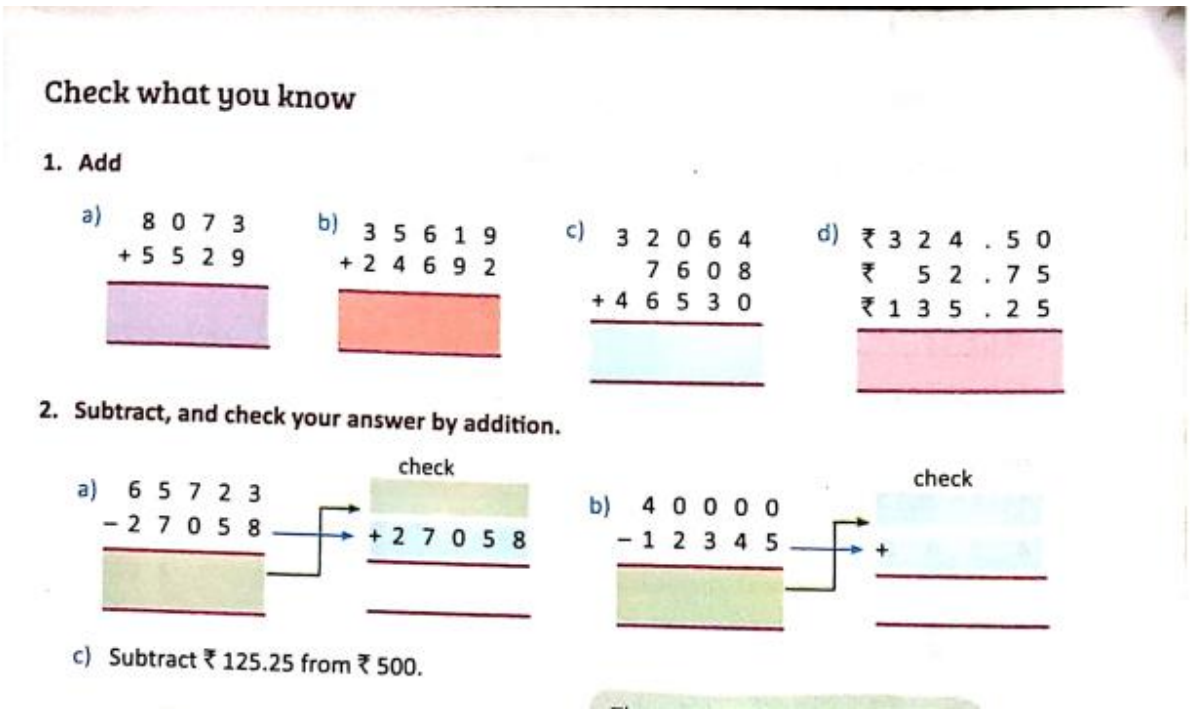
5. Which cannot be repeated- I, V, X?

Ans: V cannot be repeated.

6. What is the sum of the place values of 6 in 6,78,216?

Ans: 6,00,000 + 6 = 6,00,006

CHAPTER- 2
Addition and Subtraction and Their Applications



Check what you know

1. Add

a) 8073 + 5529

b) 35619 + 24692

c) 32064 + 7608 + 46530

d) ₹ 324.50 + ₹ 52.75 + ₹ 135.25

2. Subtract, and check your answer by addition.

a) 65723 − 27058 → check + 27058

b) 40000 − 12345 → check +

c) Subtract ₹ 125.25 from ₹ 500.

ANSWERS

1. Add

a) 13,602 b) 60,311

c) 86,202 d) 512.5

2. Subtract and check your answer by addition.

a) 38,665 b) 27,655 c) 374.75

CONCEPTS SECTION

◆ Addition of large numbers

Addition of larger numbers is done in the same way as addition of smaller numbers.

Add in order: ones → tens → hundreds → thousands → ten thousands → lakhs.
Regroup where necessary.

◆ Subtraction of large numbers

Subtraction of large numbers is done in the same way as subtraction of small numbers.

Subtract in order: ones → tens → hundreds → thousands → ten thousands → lakhs. Regroup where necessary.

EXERCISE 1

Q.1. Add

a)65489 + 96486

	L	TTH	TH	H	T	o
		6	5	4	8	9
+		9	6	4	8	6
	1	6	1	9	7	5

c) 902145 + 28369

	L	TTH	TH	H	T	O
	9	0	2	1	4	5
+		2	8	3	6	9
	9	3	0	5	1	4

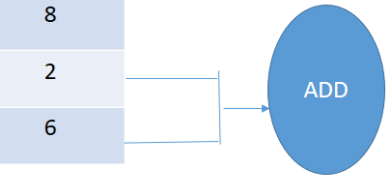
f) 45467 + 2957 + 134666

	L	TTH	TH	H	T	O
		4	5	4	6	7
			2	9	5	7
+	1	3	4	6	6	6
	1	8	3	0	9	0

2) Subtract and check your answer by addition.

a)546678 - 97612

	L	TTH	TH	H	T	O
	5	4	6	6	7	8
–		9	7	6	1	2
	4	4	9	0	6	6



Check:

	L	TTH	TH	H	T	O
	4	4	9	0	6	6
+		9	7	6	1	2
	5	4	6	6	7	8

c) 100000 - 999

	L	TTH	TH	H	T	O
	1	0	0	0	0	0
-				9	9	9
	0	9	9	0	0	1

Check:

	L	TTH	TH	H	T	O
	0	9	9	0	0	1
+				9	9	9
	1	0	0	0	0	0

f) 600001 - 123456

	L	TTH	TH	H	T	O
	6	0	0	0	0	1
–	1	2	3	4	5	6
	4	7	6	5	4	5

Check:

	L	TTH	TH	H	T	O
	1	2	3	4	5	6
+	4	7	6	5	4	5
	6	0	0	0	0	1

Q3.Ms. Shalini bought two plots of land ,one for ₹1,23,456 and other for ₹2,01,678:

a) How much money did she spend altogether?

b) By how much was the second plot of land more expensive then the first?

Solution:

a) Amount Ms. Shalini spent on one land= ₹1,23,456

Amount spent on another land= ₹2,01,678

Amount she spent altogether =

	L	TTH	TH	H	T	O
	1	2	3	4	5	6
	2	0	1	6	7	8
+	3	2	5	1	3	4

Ms. Shalini spent ₹3,25,134 altogether.

b) Amount Ms. Shalini spent on one land = ₹ 1,23,456
Amount spent on another land= ₹ 2,01,678
Here, ₹ 2,01,678 > ₹ 1,23,456
The second plot is expensive then the first plot by =

L	TTH	TH	H	T	O
2	0	1	6	7	8
1	2	3	4	5	6
0	7	8	2	2	2

The second plot was expensive then first by ₹ 78,222.

Q-5 There were two candidates in an election. Mr Bharat got 2,34,903 votes and Ms India got 1,68,799 votes:
a) How many votes were cast in all?
b)Who won the election? By how many votes?
Answer:
a) In an election,
Mr. Bharat got 2,34,903 votes
Ms. India got 1,68,799 votes
Total votes cast in all=

L	TTH	TH	H	T	O
2	3	4	9	0	3
1	6	8	7	9	9
4	0	3	7	0	2

4,03,702 votes were cast in all.

b) Votes of Mr. Bharat = 2,34,903
Votes of Ms. India= 1,68,799
2,34,903 > 1,68,799
So, Mr. Bharat won the election.

L	TTH	TH	H	T	O
2	3	4	9	0	3
1	6	8	7	9	9
0	6	6	1	0	4

Mr. Bharat won the election by 66,104 votes.

b) Votes of Mr. Bharat = 2,34,903
Votes of Ms. India= 1,68,799
2,34,903 > 1,68,799
So, Mr. Bharat won the election.

L	TTH	TH	H	T	O
2	3	4	9	0	3
1	6	8	7	9	9
0	6	6	1	0	4

Mr. Bharat won the election by 66,104 votes.