DELHI PUBLIC SCHOOL, GANDHINAGAR

CLASS : 5 **SUBJECT: MATHS**

Academic Session 2020-21

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

c) 40,00,304

Ans: Forty lakh three hundred four

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 + 6000 + 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) 50,35,219
- Q.2 Write the numeral and the expanded form: (2 marks)

  a) Forty-three lakh twenty nine thousand nine hundred 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

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 $\underline{<}$ 1,32,00,123

c) 7,54,68,788 $\underline{<}$ 7,54,86,788

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) 1,29,39,999

1,29,39,999 + 1 = 1,29,40,000

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

Q.5 Arrange in descending order.

a) 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

b) 32954602

Indian number system :

C	T L	L	T TH	TH	H	T	O
3	2	9	5	4	6	0	2

In words: Three crore twenty nine lakh fifty four thousand six hundred two

International system :

T M	M	H TH	T TH	TH	H	T	O
3	2	9	5	4	6	0	2

In words: Thirty two million nine hundred fifty four thousand six hundred two

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

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

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

e) 83,550

Here, 0 < 5

83,550 is rounded to 83,550

Q.2 Round to the nearest 100.

a) 687

Here, 8 > 5

687 is rounded to 700

d) 49,005

Here, 0 < 5

49,005 is rounded to 49,000

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) 88,645

Here, 6 > 5

88,645 is rounded to 89,000

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

c) XLIV = 40 + 4 = 44

i) LVII = 50 + 7 = 57

j) XCVIII = 90 + 8 = 98

Q.2 Write the Roman numerals for:

a) 45 = 40 + 5 = XLV

b) 58 = 50 + 8 = LVIII

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

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

SCANNED PAGES OF MATHS TEXTBOOK FOR REFERENCE

EXERCISE 1

1. **Write the number names and the expanded forms.**
   a) 23,89,009 b) 56,32,123 c) 40,00,304
2. **Write the numbers and the expanded forms.**
   a) Fifty lakh sixty-six thousand nine hundred ten
   b) Thirty-two lakh five thousand ninety-three
   c) Seventy-eight lakh fifty-six thousand
3. **Which is the greatest 7-digit number? Show it on a place-value chart.**

EXERCISE 2

1. **Write the number names and expanded forms.**
   a) 8,76,89,129 b) 6,74,20,098 c) 5,20,52,060
2. **Write the number and the expanded form.**
   a) Six crore fifty-five lakh sixty thousand eight hundred eight
   b) One crore one lakh one hundred one
   c) Five crore thirty lakh fifty-five thousand ninety-nine
3. **Which is the greatest 8-digit number? Show it on a place value chart.**

Before and after

You can get the number just before a large number by **subtracting 1 from it.**

The number before 3,45,666 is 3,45,666 – 1 = 3,45,665

The number before 48,90,300 is 48,90,300 – 1 = 48,90,299

The number just before another number is called its **predecessor.**

You can get the number just after a large number by **adding 1 to it.**

The number after 2,66,367 is 2,66,367 + 1 = 2,66,368

The number after 65,90,199 is 65,90,199 + 1 = 65,90,200

The number just after another number is called its **successor.**

EXERCISE 3

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

a) 86,32,489 ____ 1,32,00,123 b) 80,04,875 _____ 80,40,578

c) 7,54,68,788 ____ 7,54,86,788 d) 2,50,40,302 ____ 2,50,40,203

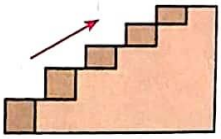
2. Write the number before.

a) 34,63,482 b) 1,23,45,010 c) 10,00,000

3. Write the number after.

a) 96,82,545 b) 1,29,39,999 c) 99,99,099

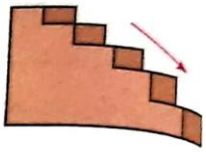
4. Arrange in ascending order.



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

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

5. Arrange in descending order.



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

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

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

a) 3, 4, 9, 1, 2, 5, 6 b) 5, 6, 7, 0, 4, 3, 2

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

a) 1, 9, 4, 5, 6, 7 b) 3, 0, 8, 5, 6, 4, 2

EXERCISE 4

1. **Write these numbers in figures and words in the Indian and international systems.**

   a) 369512 b) 2397010 c) 32954602 d) 60032051

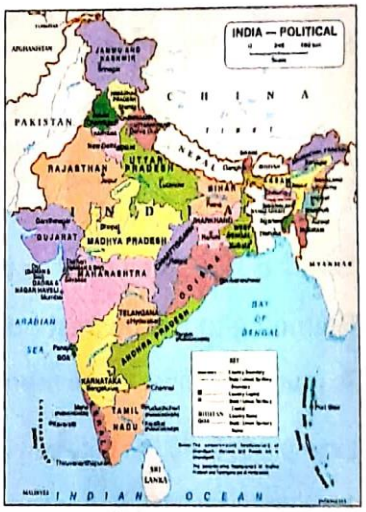
2. **Census (counting of population) in India was done in 2011. The populations of some states of India in 2011 were as follows. Write the population numbers in words.**

   a) West Bengal: 91,276,115

   b) Karnataka: 61,095,297

   c) Himachal Pradesh: 6,864,602

   d) Delhi: 1,67,87,941



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

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

   b) Goa: One million four hundred fifty-eight thousand five hundred forty-five

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

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

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

   a) 321650 b) 2389435 c) 70453271 d) 56409274

EXERCISE 5

1. **Round to the nearest 10.**

   a) 263 b) 8745 c) 24,666 d) 12,007 e) 83,550

2. **Round to the nearest 100.**

   a) 687 b) 3863 c) 24,550 d) 49,005 e) 99

3. **Round to the nearest 1000.**

   a) 6592 b) 999 c) 26,438 d) 9999 e) 88,645

4. 48,563 people saw the cricket match between India and Sri Lanka. Round the number to the nearest 100 for a newspaper headline.

5. The head of a bank gets a salary of ₹ 2,34,741 per month. Round the salary to the nearest 1000.

EXERCISE 6

1. **Write the Hindu–Arabic numerals for:**

   a) XXXIX b) XL c) LX d) XLIV e) LXV

   f) LXX g) LXXX h) LXXV i) LVII j) XCVIII

2. **Write the Roman numerals for:**

   a) 45 b) 58 c) 63 d) 68 e) 72

   f) 77 g) 84 h) 89 i) 91 j) 99

SKILLS SECTION (calculation, application and analysing skills)

Mental Maths

1. What is 1 less than 4,00,00,000?
2. 90,000,000 is 1 more than which number?
3. What is 499 rounded to the nearest 1000?
4. By how much is 4,66,77,888 more than 4,66,77,887?
5. What is the successor of the greatest 7-digit number?
6. How many lakhs is equal to 1 million?
7. Which is greater—345 rounded to the nearest 10 or rounded to the nearest 100?
8. Which of these cannot be repeated—I, V, X?
9. What is the sum of the place values of 6 in 6,78,216?

Mixed Bag

1. **Choose the correct answer.**

   a) The place value of the seventh digit from the right is:

   i. Ten lakhs ii. Ten thousands iii. Millions iv. Both i and iii

   b) 1 crore is equal to:

   i. Ten lakh × 10 ii. Ten million iii. Greatest 7 digit number + 1 iv. All of these

   c) 2,11,34,678 is bigger than which of the following?

   i. 2,34,678 ii. 2,21,34,678 iii. 34,500,000 iv. 2,11,34,679

   d) 45,604 is rounded to 45,600. It is rounded to the nearest:

   i. 10 ii. 100 iii. 1000 iv. Both i and ii

   e) Which of these is a valid Roman number?

   i. VVV ii. IIII iii. LXXX iv. XLL

2. **Give the number names and the expanded forms in the system in which these numbers are written.**

   a) 4,30,47,906 b) 54,00,095 c) 28,610,706 d) 5,600,208

3. **Write in figures.**

   a) Twenty lakh fifty-three thousand five hundred five

   b) Five crore seven lakh nine hundred ninety

DELHI PUBLIC SCHOOL, GANDHINAGAR

CLASS : 5 **SUBJECT: MATHS**

Academic Session 2020-21

CHAPTER- 2

Addition and Subtraction and Their Applications

Addition and subtraction in real life

1. **The population of Raigad is 45,725 and the population of Chaigarh is 54,879.**

   The government wants to issue Aadhaar cards to all residents of the two cities.

   a) How many Aadhaar cards will be issued?

   b) How many more Aadhaar cards will be issued in Chaigarh than in Raigarh?

2. **Saira purchased a skirt for ₹ 125.50, a sweater for ₹ 226.75 and a ribbon for ₹ 24.95.**

   a) How much money did she spend?

   b) If she gave a ₹ 500 note to the shopkeeper, how much change did she get back?

The numbers being added are called **addends.**

The number you subtract from is called the **minuend.**
The number you subtract is called the **subtrahend.**

Check what you know

1. Add

a) 8 0 7 3
+ 5 5 2 9

b) 3 5 6 1 9
+ 2 4 6 9 2

c) 3 2 0 6 4
7 6 0 8
+ 4 6 5 3 0

d) ₹ 3 2 4 . 5 0
₹ 5 2 . 7 5
₹ 1 3 5 . 2 5

2. Subtract, and check your answer by addition.

a) 6 5 7 2 3
− 2 7 0 5 8

check
+ 2 7 0 5 8

b) 4 0 0 0 0
− 1 2 3 4 5

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

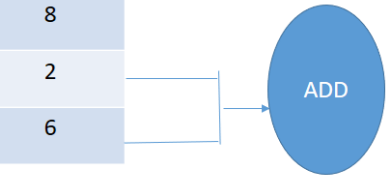
f) 45467 + 2957 + 134666

	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

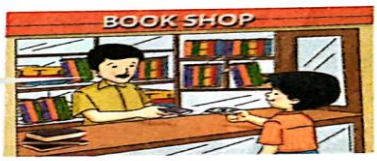
Mr. Bharat won the election by 66,104 votes.

◆ Profit and loss

I bought these Maths books from the publisher at ₹ 225 each.

₹ 225 is the **cost price (C.P.)** of the book.

Profit



I sold the book to a student for ₹ 250.

₹ 250 is the **selling price (S.P.)** of the book.

I earned ₹ 25 on the sale.

₹ 25 is the **profit.**

When the selling price (S.P.) is greater than the cost price (C.P.) there is a profit.

Profit = S.P. − C.P.

Bookseller's profit = ₹ 250 − ₹225 = ₹ 25

Loss

One of the Maths books I had got soiled. So I had to sell it at a lower price of ₹ 210. I lost ₹ 15 on this sale.

₹ 15 is the **loss.**

When the cost price (C.P.) is greater than the selling price (S.P.) there is a loss.

Loss = C.P. − S.P.

Bookseller's loss = ₹ 225 − ₹ 210 = ₹ 15

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

Q-6 A carpenter bought a table for ₹ 3500.He spent ₹ 500 on repairing and painting it. He then sold it for ₹ 3500. What was his profit or loss?

C.P. = ₹ 3500
Overheads = ₹ 500
S.P. = ₹ 3500
Total C.P. = C.P. + overheads
= ₹ 3500 + ₹ 500
= ₹ 4000

S.P. = ₹ 3500
Here, C.P.> S.P
So, Loss = C.P. – S.P.
= ₹ 4000 - 3500
= ₹ 500
He made a loss of ₹ 500.

EXERCISE 1

1. **Add**

   a) 65489 + 96486 b) 54009 + 45991 c) 902145 + 28369

   d) 2345 + 876555 e) 382078 + 249957 f) 45467 + 2957 + 134666

   g) 222321 + 65478 + 83246 h) 784567 + 56329 + 123456

2. **Subtract. Check your answer by addition.**

   a) 546678 – 97612 b) 670812 – 3456 c) 100000 – 999

   d) 310400 – 18605 e) 662233 – 640403 f) 600001 – 123456

3. **Ms Shalini bought two plots of land, one for ₹ 1,23,456 and the 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 than the first?

4. A shop had sales of ₹ 9,45,400 in a year. If the expenses were ₹ 5,65,500, how much money was saved in the year?

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?

This is the electronic voting machine (EVM) used for voting in India.

EXERCISE 2

1. Find the profit or loss.

a) C.P. = ₹ 648
S.P. = ₹ 695

C.P. = ₹ 648
S.P. = ₹ 695

b) C.P. = ₹ 237
S.P. = ₹ 295

C.P. = ₹ 237
S.P. = ₹ 295

c) C.P. = ₹ 445
S.P. = ₹ 395

C.P. = ₹ 445
S.P. = ₹ 395

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

C.P. = ₹ 150 overheads ₹ 45
S.P. = ₹ 245

2. Find the profit or loss.

	C.P.	S.P.	Profit or loss?	Amount
a)	₹ 20.75	₹ 25.00	S.P. > C.P. therefore profit	₹ 25.00 − ₹ 20.75 = ₹ ____
b)	₹ 59.50	₹ 52.95		
c)	₹ 12,500	₹ 13,595		
d)	₹ 20,445	₹ 19,995		

3. **Find the profit or loss.**

	C.P.	Overheads	Total C.P	S.P.	Profit or loss	Amount
a)	₹20.75	₹2.75		₹25.00		
b)	₹59.50	₹6.50		₹52.95		
c)	₹12,500	₹1000		₹13,595		
d)	₹20,445	₹500		₹19,995		

4. Balan bought a music system for ₹ 7,500. He did not like it and sold it for ₹ 6995. Did he make a profit or loss? How much?

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.

6. A carpenter bought a table for ₹ 3500. He spent ₹ 500 on repairing and painting it. He then sold it for ₹ 3500. What was his profit or loss?

DELHI PUBLIC SCHOOL, GANDHINAGAR

CLASS : 5 **SUBJECT: MATHS**

Academic Session 2020-21

CHAPTER- 2

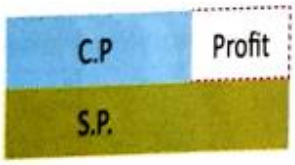
Addition and Subtraction and Their Applications (CONTINUE)

To find the selling price

Given the cost price and the profit or loss, you can easily find the selling price.

You know that: Profit = S.P. – C.P.

Therefore: **S.P. = C.P. + profit**



Also: Loss = C.P. – S.P.

Therefore: **S.P. = C.P. – loss**

EXAMPLES:

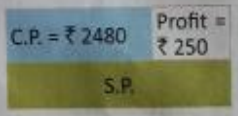
Example 1: Lala Mangatram bought a saree for ₹ 2480 and sold it at a profit of ₹ 250. What was his selling price?

S.P. of saree = C.P. + profit

= ₹ 2480 + ₹ 250

= ₹ 2730

Answer: S.P. = ₹ 2730

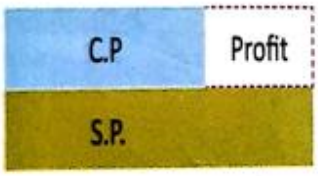


To find the cost price

Given the selling price and the profit or loss, you can easily find the cost price.

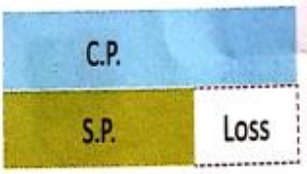
You know that: Profit = S.P. – C.P.

Therefore: **C.P. = S.P. – profit**



Loss = C.P. – S.P.

Therefore: **C.P. = S.P. + loss**



EXAMPLES:

Example 1: Raju, the mechanic sold a scooter for ₹ 25,000 and made a profit of ₹ 2575. At what price did he buy the scooter?

C.P. = S.P. – profit

= ₹ 25,000 – ₹ 2575 = ₹ 22,425

Answer: C.P. = ₹ 22,425

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

C.P. ?	
S.P = 6445	Loss = 395

Q2.Find the selling price.

	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) 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.

5. A carpenter sold a table for ₹ 4500. He made a profit of ₹ 450 on it. At what price did he buy the table?

Solution:

S.P. of table = ₹ 4,500

Profit made on table = 450

C.P. of table = ?

C.P. = S.P. – profit

= ₹ 4,500 - ₹ 450

= ₹ 4,050

Ans: The carpenter bought the table at ₹ 4,050.

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.

SCANNED TEXTBOOK IMAGES

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.?

Mixed Bag

1. **Choose the correct answer.**

   a) If 345678 – 123456 = 222222, which of the following is true?

   i. 345678 – 222222 = 123456
   ii. 123456 + 222222 = 345678
   iii. 345678 + 222222 = 123456
   iv. Both i and ii

   b) There will neither be a profit nor a loss when:

   i. S.P. > C.P.
   ii. C.P. > S.P.
   iii. S.P. = C. P.
   iv. None of these

c) Which of these can be called overhead costs?

i. Transport cost ii. Repair cost iii. Both i and ii iv. Neither i nor ii.

d) Which of these is true?

i. Profit = S.P. – (C.P. + overheads)

ii. Profit = S.P. – (C.P. – overheads)

iii. Profit = (S.P. + overheads) – C.P.

iv. All of these

2. Add or subtract as required in your notebook.

a) 3,54,942 + 99,370

b) 4,86,555 + 3,43,555

c) 2,29,834 – 87,595

d) 8,63,123 – 5,74,235

e) 36,594 + 9,838 + 1,64,397

f) 7,62,512 + 46,595 + 32,345

g) 8,50,000 – 68,785

h) 7,00,000 – 1,11,111

i) Add 2,90,586 to 4,36,583

j) Add 86,490, 1,32,240 and 5,63,057

k) Find the difference between 6,48,009 and 3,53,225

l) Find the difference between 4,00,000 and 99,999

3. Fill in the boxes.

a)

	8	3	2	5	6
+	1	□	4	□	5
1	0	0	7	1	1

b)

	3	4	6	5	□
+	2	□	5	□	6
	6	2	2	2	2

c)

	3	□	4	3	5	7
+	4	5	□	8	□	9
□		9	4	□	3	□

d)

	5	4	5	3	6
–	2	3	6	□	4
□	□	□		8	□

e)

	8	□	7	□	□
–	2	4	□	3	5
□		8	2	7	0

f)

	8	5	6	0	5	9
–	□	2	□	2	6	0
5	□		0	□	□	□

4. Applying addition and subtraction (story sums)

a) Ms Amina bought a house. She paid ₹ 2,18,670 from her savings. She took a loan of ₹ 1,50,450 from a bank to pay the rest of the money. What was the cost of the house?

b) Sushma bought a computer and a printer for ₹ 1,15,499. The cost of the computer was ₹ 85,789. What was the cost of the printer?

c) The population of Shyampur is 2,34,328. The population of Arjungarh is 2,34,750. Which town has greater population? How much more?

d) A scooter company produced 5,95,446 scooters in a year. It sold 4,06,578 scooters during the year. How many scooters were left unsold at the end of the year?

e) By how much is 2,35,678 greater than 99,999?

f) What should be added to 85,672 to get 2,32,456?

g) In a wedding, the decoration was done with yellow and golden marigold flowers and red roses. 32,456 yellow and 57,544 golden marigolds were used. 1,32,450 roses were used. How many flowers were used in all?

h) Anil bought a car in 2012. It ran 1,05,869 km in 2012, 33,632 km in 2013 and 9870 km in 2014. How many kilometres did it run in all in the three years?

5. Find the profit, loss, C.P. or S.P. as required, by filling in the yellow boxes.

	C.P. ₹	Overheads ₹	Total C.P. ₹	S.P. ₹	Profit or loss ₹
a)	15.75	-	-		5.25 profit
b)	100.00	10.00		99.95	(profit/loss)
c)	15,550	-	-		565 loss
d)		-	-	29,995	1235 profit
e)		-	-	32,176	2550 loss
f)	23,500	2235		32,695	(profit/loss)

6. Applying profit and loss (story sums)

a) An artist bought a painting for ₹ 5,600. She spent ₹ 1350 in framing it. She then sold it for ₹ 6950. Find her profit or loss.

b) Alam bought a used car for ₹ 45,600. He spent ₹ 2356 in repairing it and then sold it for ₹ 47,000. Did he make a profit or loss? How much?

c) The school bookseller buys a set of Class 5 textbooks for ₹ 1559. At what price should he sell the set to make a profit of ₹ 500?

d) Jeevan sold his watch at ₹ 2350 and incurred a loss of ₹ 250. At what price had he bought the watch?

e) Suzy bought a camera for ₹ 15,995. She bought a case for it for ₹ 200. She now wants to sell the camera and case to make a profit of ₹ 1000. At what price should she sell the camera?

f) A car dealer sells a car for ₹ 2,35,000 and makes a profit of ₹ 10,500. At what price did he buy the car?

DELHI PUBLIC SCHOOL, GANDHINAGAR

CLASS : 5 **SUBJECT: MATHS**

Academic Session 2020-21

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)
3 9 7 4
X 3 2
7 9 4 8
+ 11 9 2 2 0
12 7 1 6 8

c)
5 2 5 6
X 4 0 5
2 6 2 8 0
0 0 0 0 0
+ 2 10 2 4 0 0
2 12 8 6 8 0

d) 3742 x 66 (H. W)

g) 8090 x 503 (H.W)

e)
8 4 0 6
X 4 7
5 8 8 4 2
+ 3 3 6 2 4 0
3 9 5 0 8 2

i)
6 5 2 5
X 7 2 5
3 2 6 2 5
1 3 0 5 0 0
+ 4 5 6 7 5 0 0
4 7 3 0 6 2 5

j) 540 x 100 = 54000

k) 6700 x 300 = 2010000

l) 28000 x 10 = 280000

h) 7009 x 709 (H.W)

EXERCISE 1 : WORD PROBLEM

2. A book has 248 pages. 5135 copies of the book are printed. How many pages are printed?

Solution :

Number of pages in a book = 2 4 8

Number of printed copies of the book = 5 1 3 5

Total number of printed pages = 248 x 5135

= 12,73,480

Ans : There are 12,73,480 printed pages.

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

- c) 82006 ÷ 80

```
      1 0 2 5
  ┌───────────
80 8 2 0 0 6
-  8 0
     0 2 0 0
      -1 6 0
        0 4 0 6
      -   4 0 0
          0 0 6
```

Check:

Dividend = Quotient x Divisor + Remainder

= 1025 x 80 + 6

= 82000 + 6

= 82006

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
```

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.

  a) 40, 90, 70, 80

  Solution :

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

Average = $\frac{40 + 90 + 70 + 80}{4}$

Average = $\frac{280}{4}$

Average : 70

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

Solution :

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

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

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

Average = $\frac{4\,5}{9}$

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 = **Sum of quantities**

Number of quantities

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

Average = $\frac{8\ 8\ 0\ \text{cm}}{6}$

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 2020-21

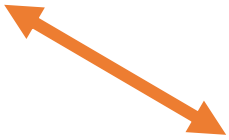
CHAPTER- 8

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.

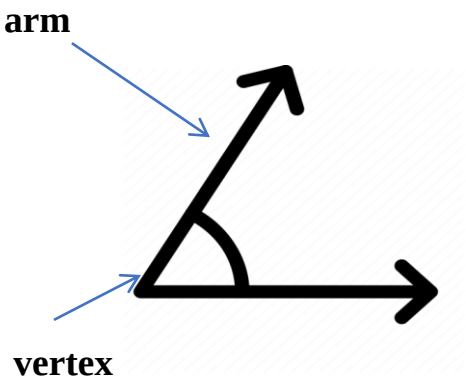


A line segment is a part of line. It has two endpoints. This line segment has two endpoints C and D. It is called lines Segment CD or $\overline{CD}$.

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 $\overrightarrow{EF}$.

Concepts Section :-

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



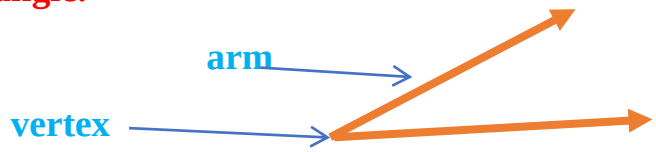
Parts of an Angle

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.

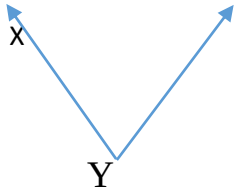
Note :- While naming an angle, the middle letter is always the vertex of the angle.



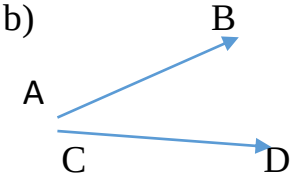
Exercise 1

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

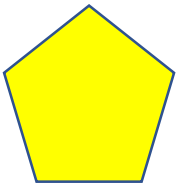
a) √ x z



b)



2. Find the number of angles in each shape.

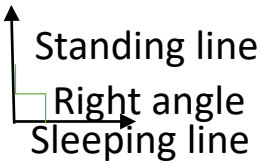
a. 5 

c. 8 

Types of Angles

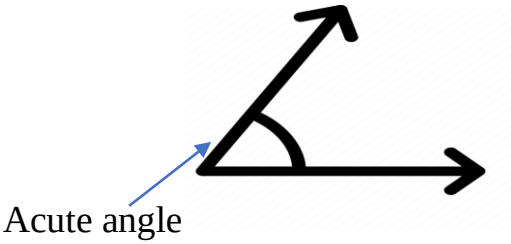
Right Angle :-

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

A right angle is marked as 

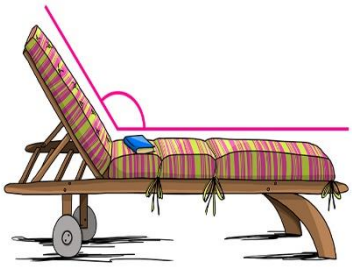
Acute Angles

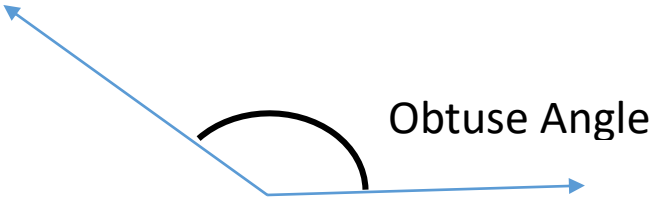
Angles less than a right angle are called acute angles.



Obtuse Angles

Angles greater than a right angle are called obtuse angles.





Straight Angles

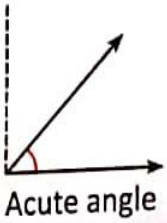
Two right angles together make a straight angle.

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

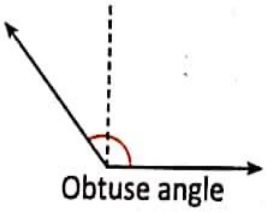
Types of angles in degrees

A **right angle** measures *90°*.

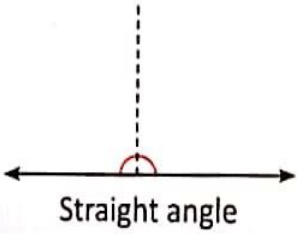
An **acute angle** is less than a right angle.
Therefore, *it is more than 0° but less than 90°*.

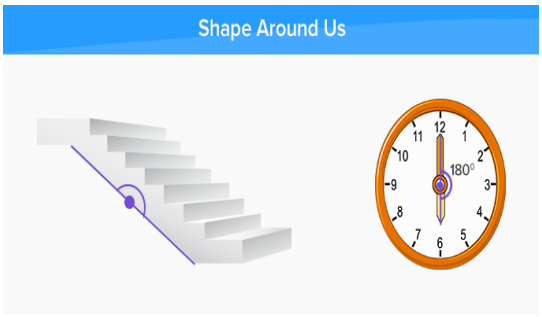


An **obtuse angle** is *more than 90° but less than 180°*.



A **straight angle** measures *180°*.

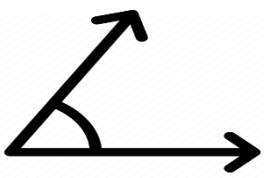




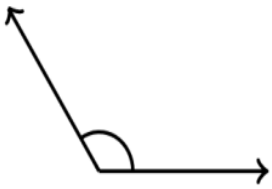
Exercise 2

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

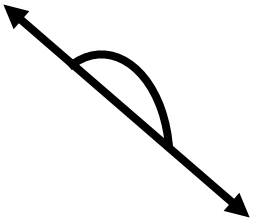
a. Acute angle



b. Obtuse angle

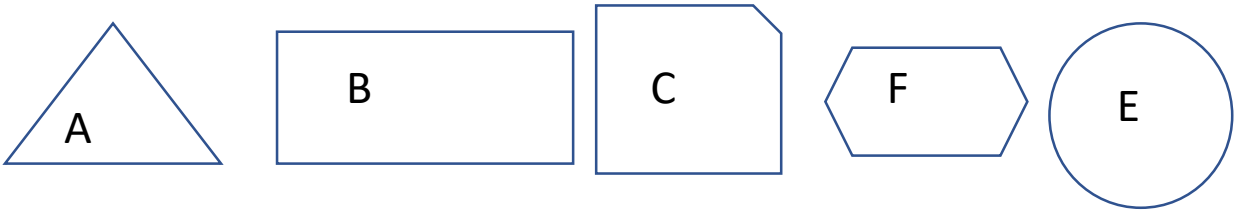


g. Straight angle



h. Right angle

2. Identify the shape being described.



a. I have 4 right angles. ___B_____

b. I have 3 acute angles. _A_____

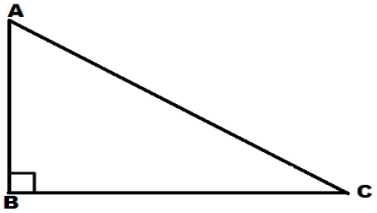
d. I have 3 right angles and 2 obtuse angles. __C_____

e. I have 6 obtuse angles. __F_____

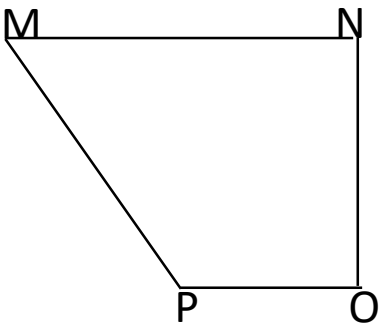
g. I have no angles. ___E_____

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

a)



b)

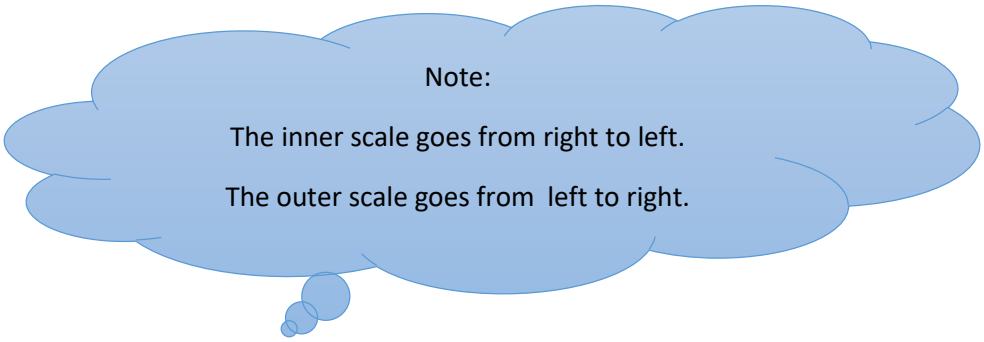


	No. of sides	No. of Angles	Right Angles	Acute Angle	Obtuse Angle
a)	3	3	1	2	-
b)	4	4	2	1	1

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.



Video on measuring angles.

https://www.youtube.com/watch?v=yQW1fzVS354

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.

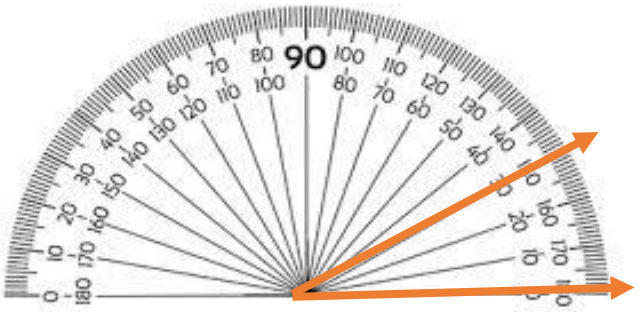
Video on drawing angle

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

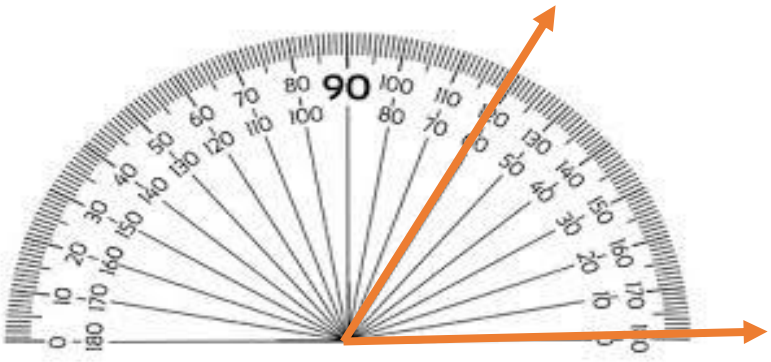
Exercise 3

1.Write the measures of each angle.

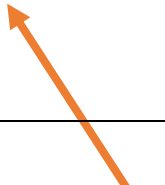
b. 30˚

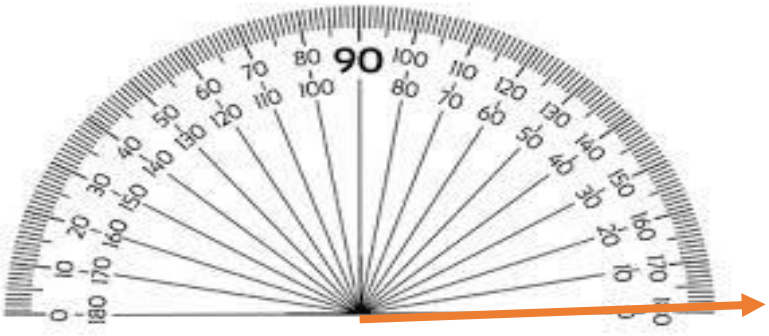


b. 60˚



c. 120˚

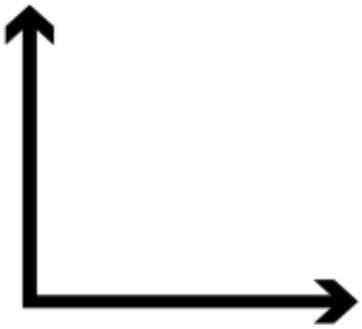




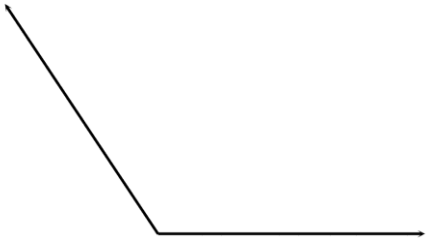
d. 150˚ HW

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

DELHI PUBLIC SCHOOL, GANDHINAGAR

CLASS : 5 **SUBJECT: MATHS**

Academic Session 2020-21

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~~	~~00~~	
- 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

CLASS : 5 **SUBJECT: MATHS**

Academic Session 2020-21

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.

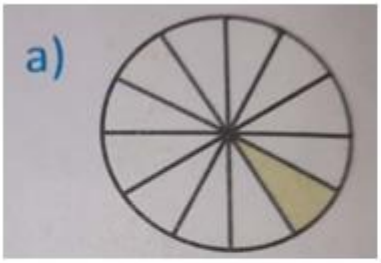
- For example, $\frac{5}{10}$ is a fraction.

- Here, 5 is a numerator and10 is a denominator

EXERCISE 1

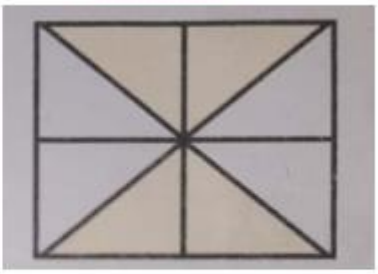
Q1 Write two equivalent fractions each for the coloured part. (TEXTBOOK)

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

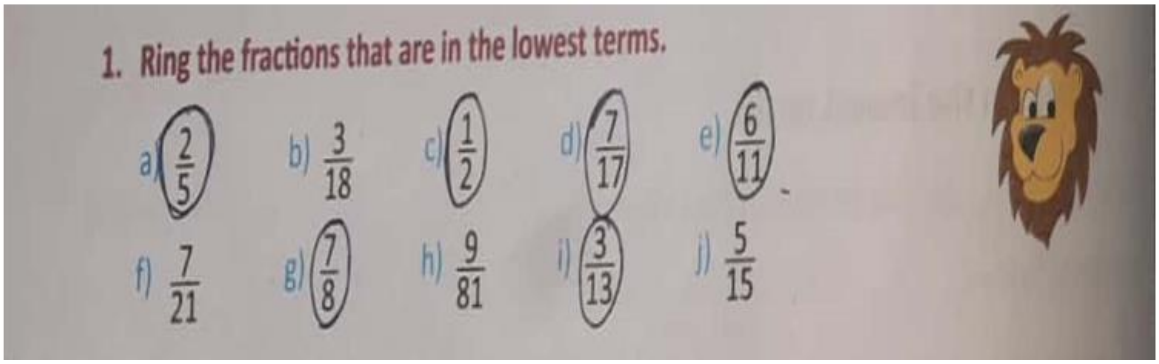
$\frac{5}{11}$  $\frac{20}{44}$

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.

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

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

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

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

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

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

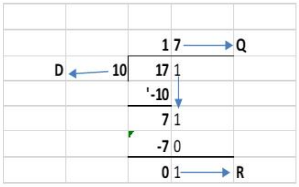
= 10

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

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

$= \frac{171}{10}$

$= 17\frac{1}{10}$ *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) $\frac{1}{3} - \frac{1}{8}$

LCM of 3 and 8 is 24.

	2	8	3
	2	4	3
	2	2	3
	3	1	3
		1	3
LCM = 2 x 2 x 2 x 3			
	= 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: $1 - \frac{3}{5} = \frac{5-3}{5}$

$$= \frac{2}{5}$$

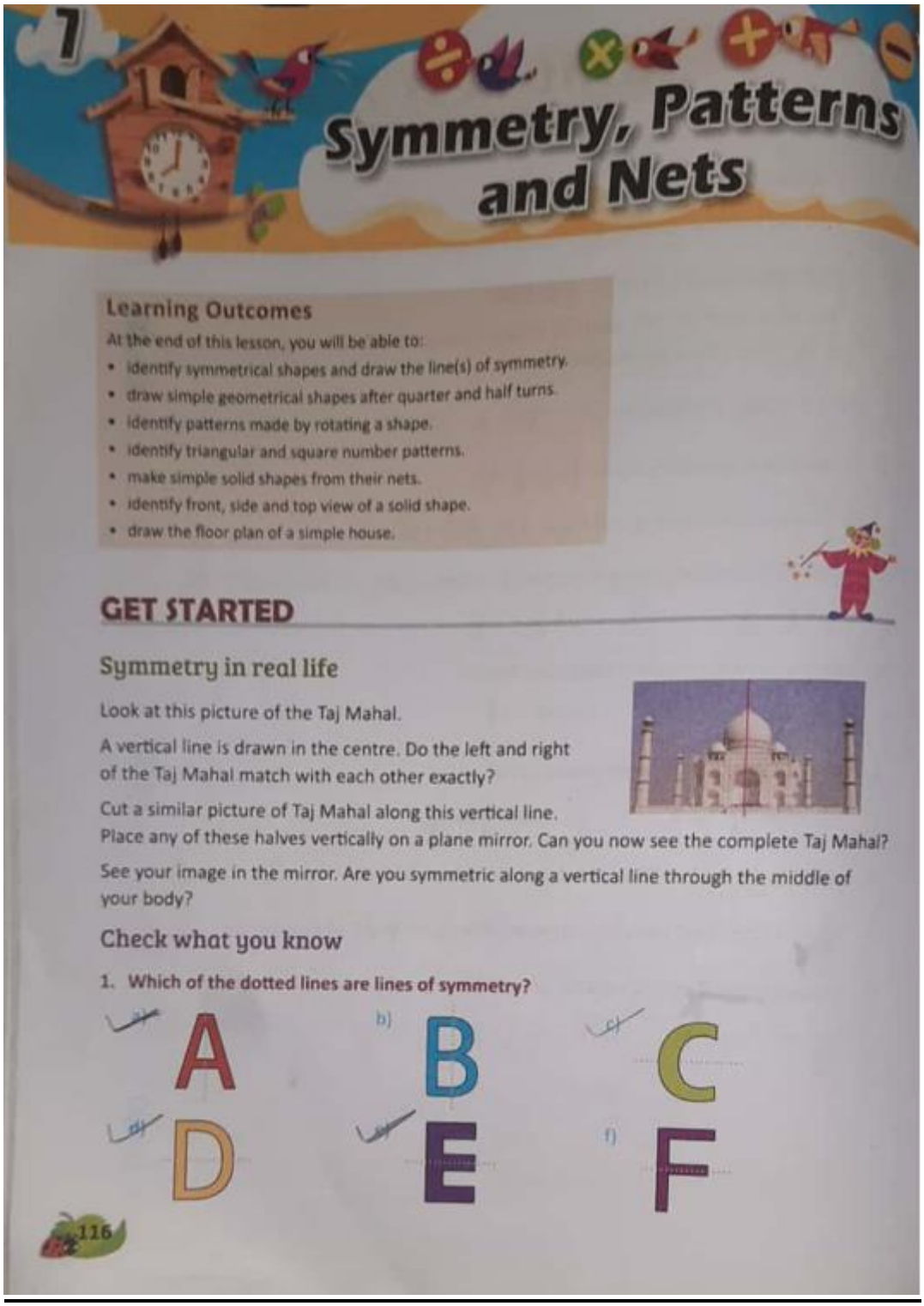
DELHI PUBLIC SCHOOL, GANDHINAGAR

CLASS: 5 **SUBJECT: MATHS**

Academic Session 2020-21

CHAPTER- 7

Symmetry, Patterns and Nets



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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?

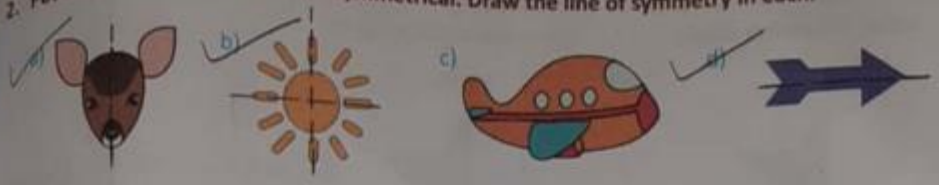
Check what you know

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

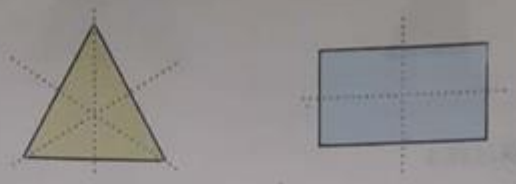
A B C D E F

116

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

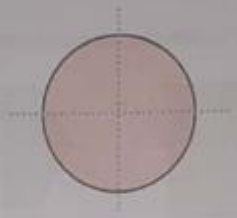


Some shapes have more than one line of symmetry.



How many lines of symmetry does a circle have?

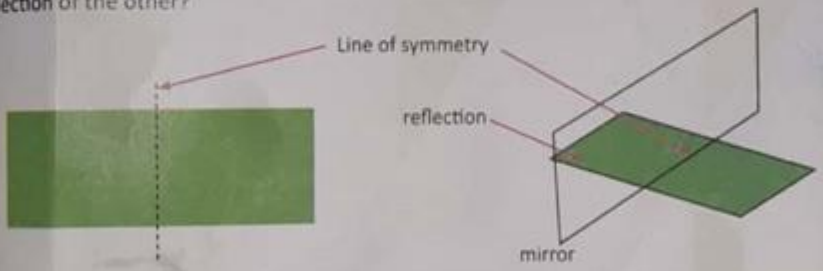
Two are marked—can you mark more?



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?



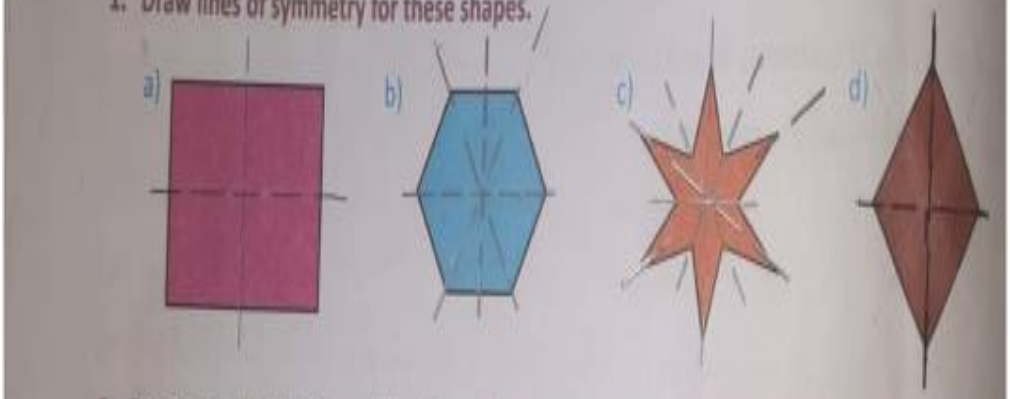
Try with the symmetrical shapes on the previous page.

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

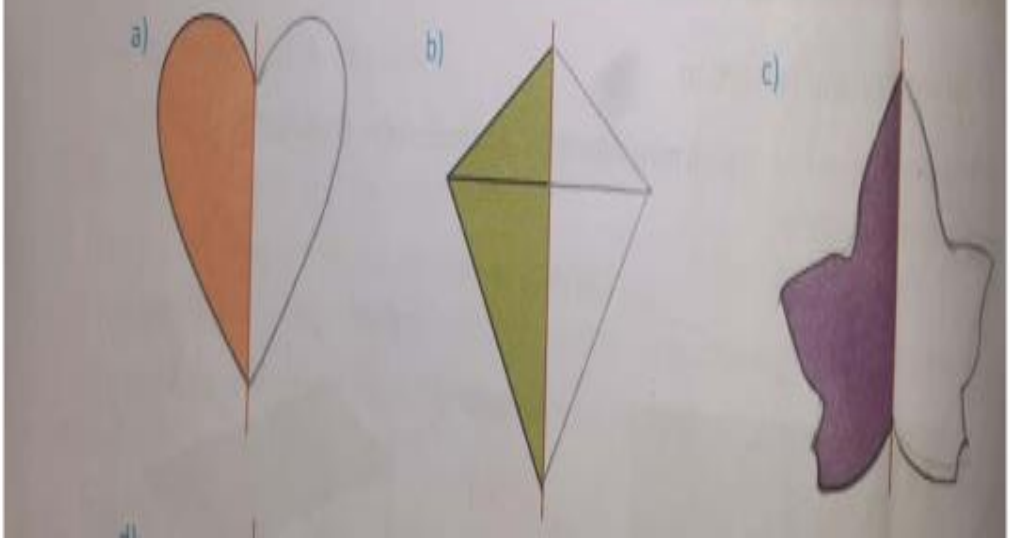
We say that symmetric shapes have **mirror** (or **reflection**) **symmetry** along their lines of symmetry.

EXERCISE 1

1. Draw lines of symmetry for these shapes.



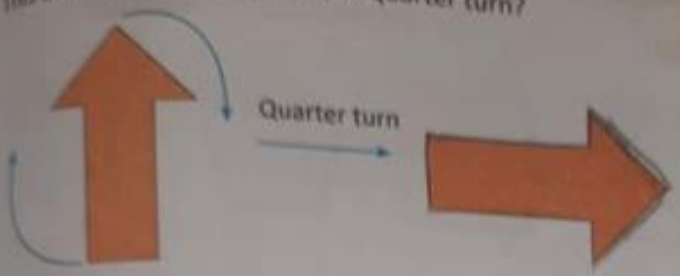
2. Put a mirror along the red line. Draw the symmetric figure in your notebook.



Turning shapes

Quarter turn

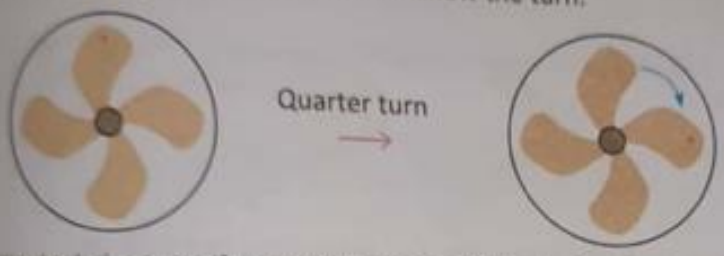
This arrow looks different after a quarter turn?



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)

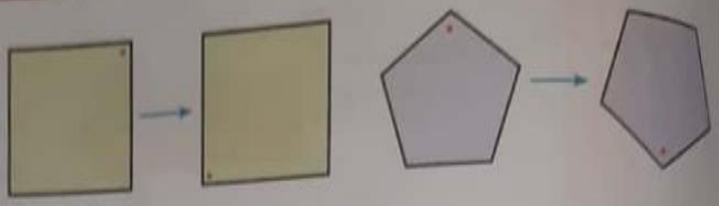
This is called a paisley design. It is commonly used in clothes such as saris.

Half a turn

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

It still looks the same!

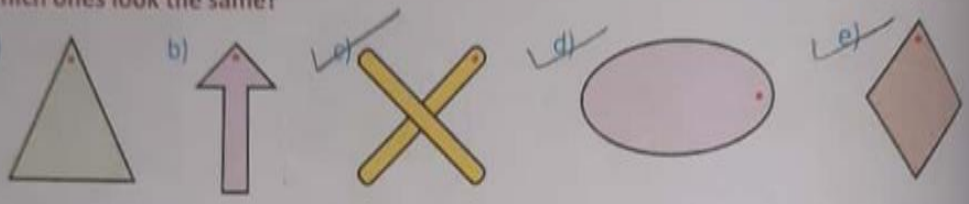
Some shapes look the same after half a turn, but others do not. The dot will help you see the turn.



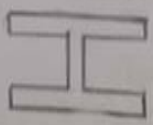
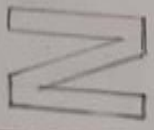
EXERCISE 3

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)



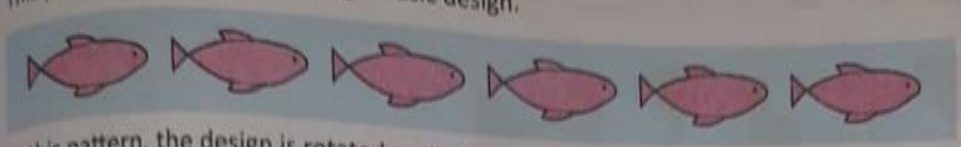
2. Give each shape a quarter turn and a half turn. Put a ✓ on the ones that look the same. Use dots to help if you want.

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

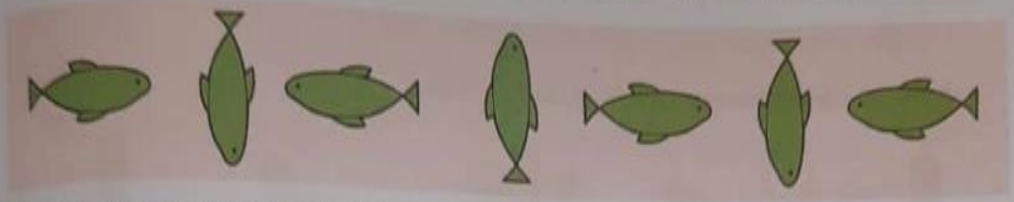
Patterns

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.

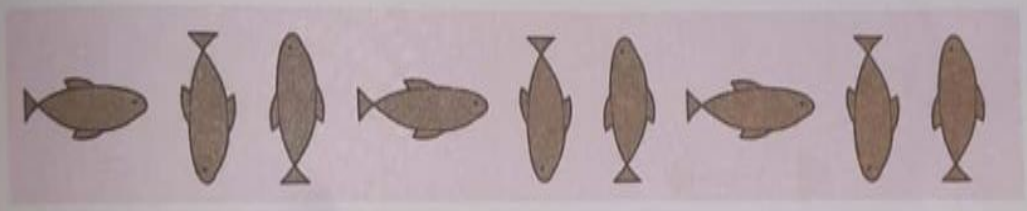


In this pattern, the design is rotated each time by one-quarter turn in the clockwise direction.



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.

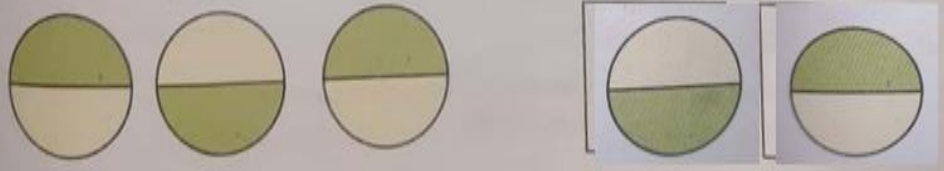


EXERCISE 4

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

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

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

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

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