New COMPOSITE MATHEMATICS

Class

3

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Cover image represents Mathematics in real life

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Preface

In response to the tremendous response and numerous feedbacks received from teachers and students, we feel great pleasure to bring out this new edition titled **New Composite Mathematics** for LKG to Class 5.

As you are well aware, the primary classes form the foundation of a student's knowledge. It is at this very level that a child grasps the fundamental concepts of mathematics, which he/she goes on to apply to all sorts of fields in higher classes. It, therefore, becomes essential to make him/her understand these concepts very clearly.

Further, the latest syllabus prescribed by NCERT stresses on practical approach to studies, so that the child can learn the basic concepts from things around him. This approach ensures a long lasting impact on the mind of the children.

The salient features of the series are:

- Completely redesigned and re-illustrated.
- The theory is presented in a very simple language and supported with examples from everyday life.
- Adequate number of questions for practice have been given in exercises to enable child to have sufficient drill on each topic.
- The section called **'Activity Time'** in each chapter contains relevant Maths Lab Activities, Fun Activities and Projects.
- A section called **'Assessment'** with two parts has been added to each chapter.
  (a) **Question Bag 1** consisting of Multiple Choice Questions.
  (b) **Question Bag 2** consisting of short answer questions, true/false questions and fill in the blanks.

Suggestions for any improvement in the books of the series are always welcome.

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1 Revision

Exercise 1

1. Write each of the following numbers in words.

(a) 117 (b) 245 (c) 696 (d) 839

(e) 987 (f) 717 (g) 534 (h) 999

2. Write the following numbers in figures.

(a) One hundred fifty-nine (b) Two hundred twelve

(c) Nine hundred sixty (d) Six hundred nine

(e) Eight hundred ten (f) Three hundred sixteen

(g) Seven hundred seventy

3. Complete each of the following patterns.

(a) 294, 296, ..., ..., ..., 304, ...

(b) 314, 324, ..., 344, ..., ..., ...

(c) 544, 547, ..., 553, ..., ..., 562

(d) 680, ..., 690, ..., ..., 705, ...

(e) 825, 845, 865, ..., ..., ..., ...

4. Counting by twos write numbers from 491 to 505.

5. Counting by threes write numbers from 181 to 199.

6. Counting by fives write numbers from 708 to 733.

7. Counting by twenties write numbers from 791 to 911.

8. Write each of the following numbers in the expanded form.

(a) 693 = ... + ... + ...

(b) 911 = ... + ... + ...

(c) 360 = ... + ... + ...

(d) 805 = ... + ... + ...

(e) 777 = ... + ... + ...

9. Write each of the following in short form.

(a) 200 + 60 + 7 = ...
(b) 500 + 60 + 9 = ...
(c) 600 + 0 + 4 = ...
(d) 100 + 20 + 3 = ...
(e) 900 + 90 + 9 = ...
(f) 700 + 90 + 0 = ...
(g) 5 hundreds + 3 tens + 8 ones = ...
(h) 8 hundreds + 0 tens + 3 ones = ...
(i) 2 hundreds + 1 ten + 9 ones = ...
(j) 3 hundreds + 5 tens + 0 ones = ...
(k) 4 hundreds + 0 tens + 7 ones = ...

10. Fill in the blanks.

(a) The largest 1-digit number is .....
(b) The smallest 1-digit number is .....
(c) The smallest 2-digit number is .....
(d) The largest 2-digit number is .....
(e) The smallest 3-digit number is .....
(f) The largest 3-digit number is .....

11. (a) How many 1-digit numbers are there?
(b) How many 2-digit numbers are there?
(c) How many 3-digit numbers are there?

12. Fill in the boxes with the correct symbol < or >.

(a) 64 ☐ 46
(b) 98 ☐ 101
(c) 467 ☐ 647
(d) 90 ☐ 900
(e) 897 ☐ 978
(f) 243 ☐ 342
(g) 301 ☐ 203
(h) 756 ☐ 765
(i) 472 ☐ 500

13. Encircle the greatest number.

(a) 107, 701, 170, 770, 707
(b) 695, 596, 956, 659, 965
(c) 345, 534, 435, 543, 354
(d) 309, 903, 390, 930, 900, 990
(e) 678, 867, 768, 787, 876
(f) 962, 692, 296, 976, 679, 960

14. Arrange the following numbers in increasing order.

(a) 169, 93, 619, 39, 961, 196
(b) 690, 609, 906, 96, 960, 996
(c) 375, 735, 537, 75, 37, 307
(d) 703, 530, 633, 773, 553, 333
(e) 468, 864, 446, 648, 846, 668
(f) 54, 504, 450, 45, 405, 540

15. Arrange the following numbers in decreasing order.

(a) 345, 543, 435, 34, 45, 405
(b) 651, 156, 65, 535, 354, 165
(c) 471, 147, 741, 417, 174, 714
(d) 91, 19, 109, 90, 901, 190
(e) 783, 837, 378, 738, 873, 387
(f) 185, 59, 107, 217, 135, 172

16. Write the place value of the underlined digit in each of the following numbers.

(a) 6$\underline{9}$5 (b) 83$\underline{7}$ (c) $\underline{1}$26 (d) 5$\underline{4}$1

(e) 23$\underline{9}$ (f) 9$\underline{6}$2 (g) $\underline{4}$13 (h) 1$\underline{7}$9

17. Write all possible 3-digit numbers using all the digits 8, 3, 9.

18. Write all possible 3-digit numbers using all the digits 7, 2, 0.

Add the following.

19.

	5	7
+	4	3

20.

	6	3
+	2	9

21.

	4	8
+	3	7

22.

	8	9
+	4	6

23.

	4	5
	3	2
+	2	6

24.

	7	4
	2	8
+	1	6

25.

	8	2
	4	8
+	1	9

26.

	6	2
		9
+	4	4

27.

	5	7	6
+	3	4	7

28.

	7	8	5
+	1	6	7

29.

	6	3	8
+		6	9

30.

	4	7	3
+	3	2	7

31.

	2	9	5
+	5	8	6

32.

	2	0	9
+	4	9	8

33.

	3	4	1
+	5	8	9

34.

	7	6	5
+	1	4	9

35.

	1	3	5
	2	4	7
+	3	5	4

36.

	4	5	8
		6	3
+	1	7	5

37.

		9	3
	1	2	5
+	4	8	6

38.

	6	8	7
		7	8
+		6	4

Arrange in columns and add.

39. 279 + 482

40. 507 + 195

41. 683 + 189

42. 105 + 78 + 467

43. 258 + 65 + 184

44. 723 + 98 + 147

45. 297 + 83 + 9

46. 379 + 93 + 56

47. 564 + 53 + 108

Subtract the following.

48.
$$\begin{array}{r} 32 \\ -\ 18 \\ \hline \end{array}$$

49.
$$\begin{array}{r} 63 \\ -\ 36 \\ \hline \end{array}$$

50.
$$\begin{array}{r} 81 \\ -\ 49 \\ \hline \end{array}$$

51.
$$\begin{array}{r} 70 \\ -\ 31 \\ \hline \end{array}$$

52.
$$\begin{array}{r} 100 \\ -\ \ 74 \\ \hline \end{array}$$

53.
$$\begin{array}{r} 472 \\ -\ 194 \\ \hline \end{array}$$

54.
$$\begin{array}{r} 605 \\ -\ 316 \\ \hline \end{array}$$

55.
$$\begin{array}{r} 500 \\ -\ 187 \\ \hline \end{array}$$

56.
$$\begin{array}{r} 710 \\ -\ 397 \\ \hline \end{array}$$

57.
$$\begin{array}{r} 801 \\ -\ 419 \\ \hline \end{array}$$

58.
$$\begin{array}{r} 500 \\ -\ 264 \\ \hline \end{array}$$

59.
$$\begin{array}{r} 340 \\ -\ 173 \\ \hline \end{array}$$

Arrange in columns and find the difference.

60. 625 – 386

61. 803 – 575

62. 900 – 709

63. 940 – 761

64. 821 – 349

65. 401 – 212

66. In a village, there are 537 men, 278 women and 123 children. What is the population of the village?

67. There are 832 students in a school. Out of these, 374 are girls. How many boys are studying in the school?

68. Rajan had 388 marbles. His sister had 96 marbles more than him. How many marbles did both of them have in all?

69. Sachin is going on a 700 km trip. If he has already travelled 282 km, how much farther he has to travel?

70. The sum of two numbers is 653. If one of the numbers is 365, find the other.

71. What should be added to 276 to make it 500?

72. Fill in the blanks.

(a) $3 \times 8 =$ ☐ (b) $6 \times 6 =$ ☐ (c) $9 \times 4 =$ ☐

(d) $2 \times 9 =$ ☐ (e) $4 \times 5 =$ ☐ (f) $8 \times 8 =$ ☐

(g) $7 \times 6 =$ ☐ (h) $5 \times 7 =$ ☐ (i) $9 \times 8 =$ ☐

73. Fill in the blanks.

(a) $15 \times 1 =$ ☐ (b) $1 \times 19 =$ ☐ (c) $5 \times 0 =$ ☐

(d) $0 \times 8 =$ ☐ (e) $3 \times 6 = 6 \times$ ☐ (f) $10 \times 7 = 7 \times$ ☐

(g) $9 \times 8 = 8 \times$ ☐ (h) $6 \times 4 =$ ☐ $\times 6$

74. How many days are there in 8 weeks?

75. An insect has 6 legs. How many legs do 9 insects have?

76. Mansi is 7 years old. Her brother is twice as old as she is. How old is her brother?

77. How much is 10 times 5 less than 6 times 9?

78. There are 16 chairs in a row in a cinema hall. How many chairs are there in 5 such rows?

79. Write two division facts for each of the following multiplication facts.

(a) $6 \times 7 = 42$ (b) $5 \times 4 = 20$ (c) $7 \times 9 = 63$

(d) $2 \times 8 = 16$ (e) $3 \times 9 = 27$ (f) $8 \times 7 = 56$

80. Write the multiplication fact for each of the following division facts.

(a) $10 \div 5 = 2$ (b) $54 \div 6 = 9$ (c) $30 \div 10 = 3$

81. 63 toffees are distributed equally among 7 children. How many toffees does each child get?

82. 35 persons plan to go on a picnic. If 5 persons ride in a car, how many cars are needed?

83. How many oranges do you buy for ₹ 24, if each orange costs 3 rupees?

84. (a) How many 20-paise coins make a rupee?

(b) How many 50-paise coins make a rupee?

(c) How many 2-rupee notes make ₹ 10?

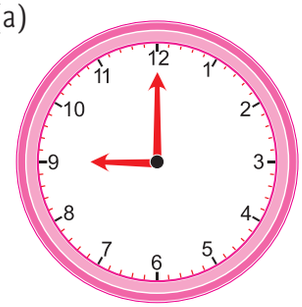
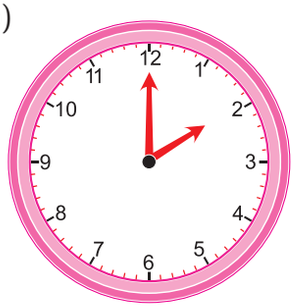
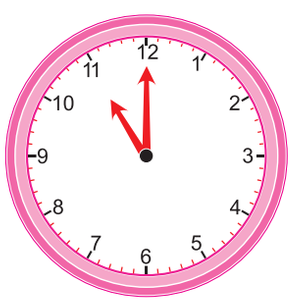
(d) How many 5-rupee notes make ₹ 20?

(e) How many 10-rupee notes make ₹ 100?

85. Rohit bought a toy for ₹ 248 and a pen for ₹ 185. If he had ₹ 500, how much money is left with him?

86. Read the clock and write the correct time in the boxes.

(a) (b) (c)

_____ _____ _____

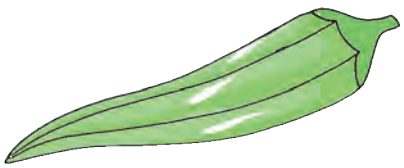
87. Look at the objects given below and write down the names of their shapes.

(a)

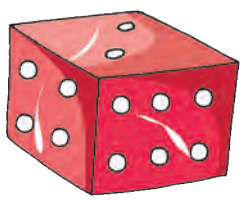
(b)

(c)

(d)



(e)



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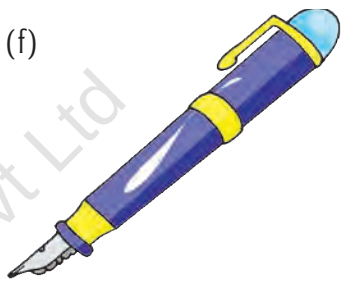
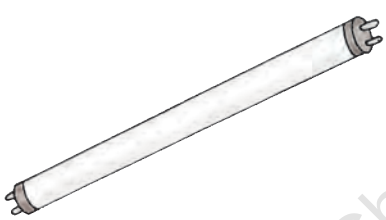


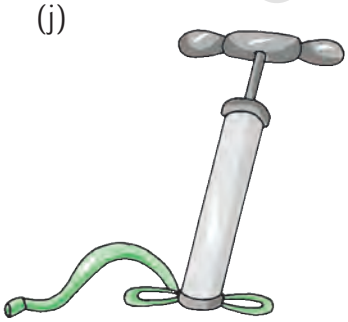
(g)



(h)

(i)

(j)



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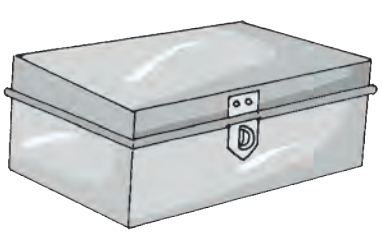

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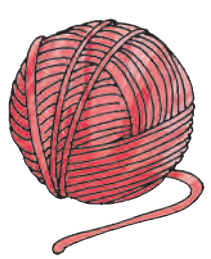


2 Numbers
(UPTO TEN THOUSAND)

4-digit Numbers

Till now, we have learnt how to read and write 2-digit and 3-digit numbers.

We already know that

The smallest 2-digit number is 10.

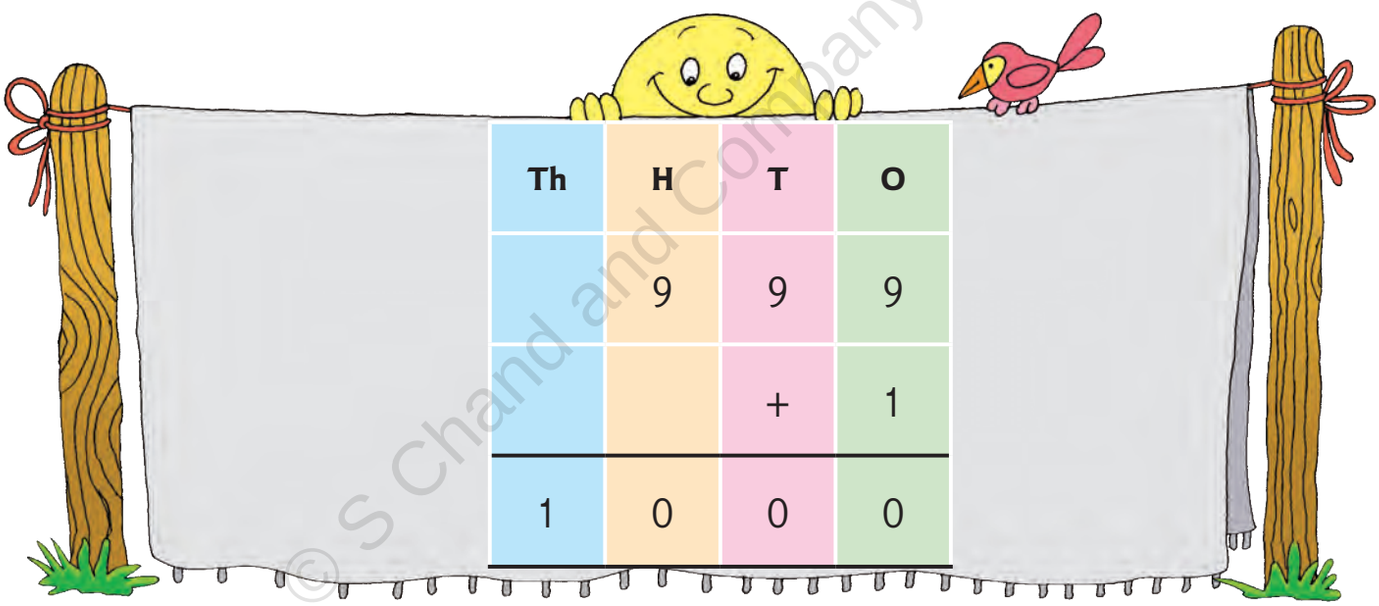
The largest 2-digit number is 99.

The smallest 3-digit number is 100.

The largest 3-digit number is 999.

Now, we shall learn about 4-digit numbers.

Let us add 1 to 999, as shown below.

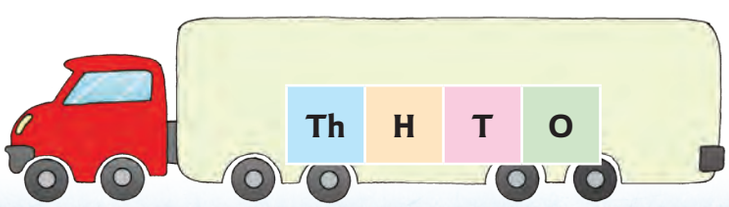


Th	H	T	O
	9	9	9
		+	1
1	0	0	0

We call 1000 as one thousand.

1000 is the smallest 4-digit number.

In the place value chart, the fourth place from the right is called the thousands place.



Thus, we have larger numbers as given below.

Numeral	Read as
1001	One thousand one
1002	One thousand two
1003	One thousand three
. . .	. . .
1010	One thousand ten
. . .	. . .
1099	One thousand ninety-nine
1100	One thousand one hundred
. . .	. . .
1200	One thousand two hundred
. . .	. . .
1999	One thousand nine hundred ninety-nine
2000	Two thousand
2001	Two thousand one
. . .	. . .
2999	Two thousand nine hundred ninety-nine
3000	Three thousand
. . .	. . .
9999	Nine thousand nine hundred ninety-nine.

9999 is the largest 4-digit number.

4-digit Numbers on the Abacus

Consider an abacus with 4 spikes as shown. Start from the right.

The number of beads in the spikes show ones, tens, hundreds and thousands respectively.

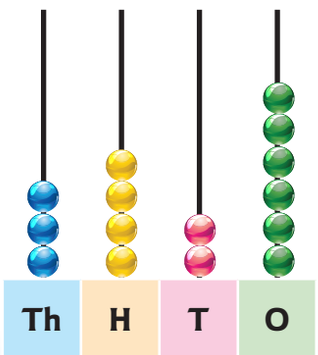
Look at the abacus given herewith.

The abacus shows the number 3426.

We read it as: Three thousand four hundred twenty-six.

The same number may be written in a place value chart as shown below.

Th	H	T	O
3	4	2	6



Solved Examples

Example 1: Arrange the digits of each of the following numbers in the place value chart. Write the number name of each.

(a) 8563 (b) 2934 (c) 5019 (d) 9607

Solution: Starting from the right, we make entries in the place value chart as shown below:

	Thousands	Hundreds	Tens	Ones
	Th	H	T	O
(a)	8	5	6	3
(b)	2	9	3	4
(c)	5	0	1	9
(d)	9	6	0	7

Now, we write their number names, as shown below:

(a) Eight thousand five hundred sixty-three

(b) Two thousand nine hundred thirty-four

(c) Five thousand nineteen

(d) Nine thousand six hundred seven

Example 2: Write the numeral for each of the following.

(a) Four thousand eight hundred seventy

(b) Seven thousand three hundred six

(c) One thousand twenty-six

(d) Three thousand one

Solution: (a) Four thousand eight hundred seventy

= 4 thousands 8 hundreds 7 tens 0 ones

= 4870.

(b) Seven thousand three hundred six

= 7 thousands 3 hundreds 0 tens 6 ones

= 7306.

(c) One thousand twenty-six

= 1 thousand 0 hundreds 2 tens 6 ones

= 1026.

(d) Three thousand one

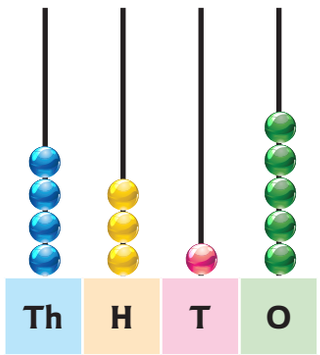
= 3 thousands 0 hundreds 0 tens 1 one

= 3001.

Exercise 2

Read the abacus and write the number and the number name. One has been done for you.

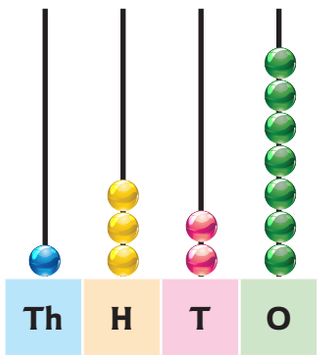
1.



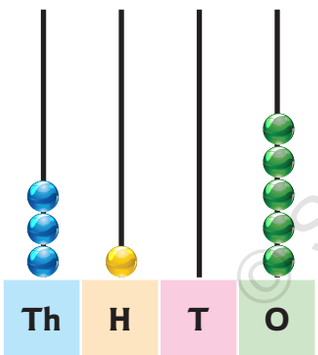
4315

Four thousand three hundred fifteen

2.



3.



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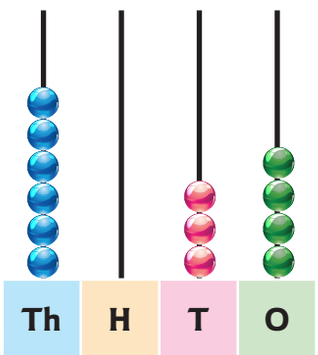

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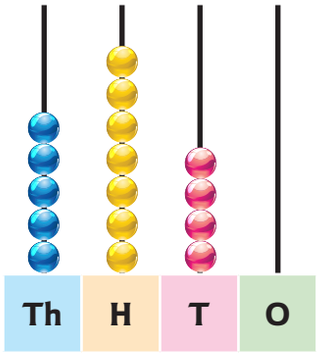

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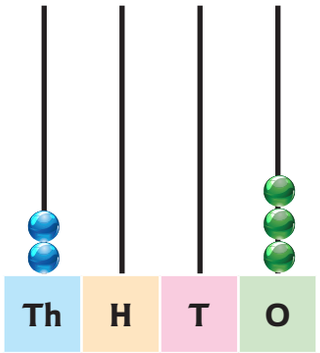

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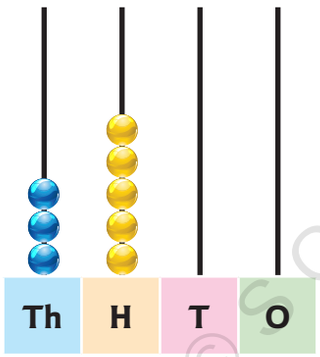

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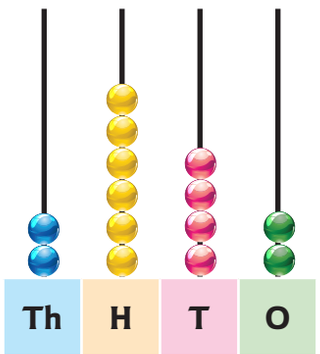

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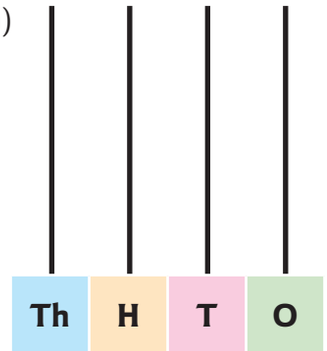
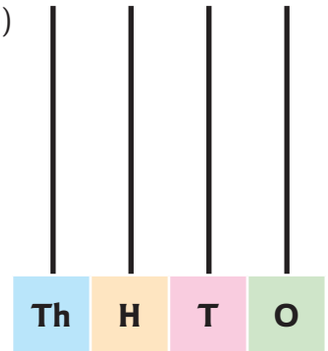
9. Represent the given numbers on the abacus.

(a)



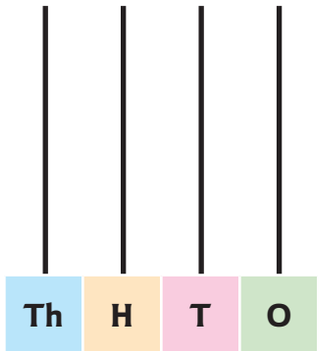
2134

(b)



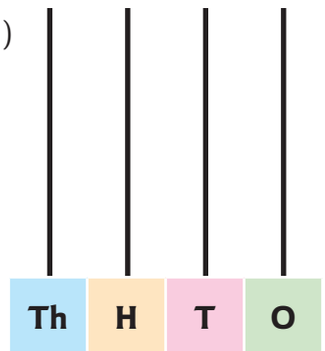
3041

(c)



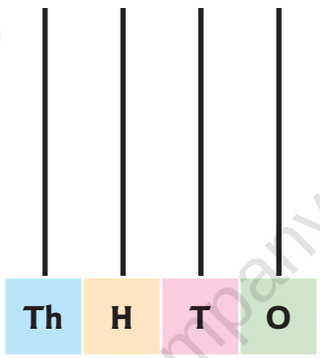
4206

(d)



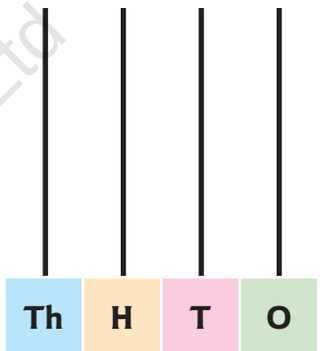
5007

(e)



1730

(f)



1025

10. Write the numerals for each of the following. One has been done for you.

(a) Six thousand two hundred thirty-seven — 6237

(b) Eight thousand five hundred ninety-two

(c) One thousand three hundred seventy-nine

(d) Five thousand nine hundred eighty

(e) Three thousand four hundred thirteen

(f) Four thousand seven hundred three

(g) Nine thousand two hundred five

(h) Two thousand sixty-seven

(i) One thousand thirty

(j) Five thousand eighteen

(k) Nine thousand nine

(l) Three thousand ten

(m) Two thousand three

11. Fill in the boxes with the missing digits. One has been done for you.

(a) 3578 = 3 thousands 5 hundreds 7 tens 8 ones

(b) 5347 = ☐ thousands ☐ hundreds ☐ tens ☐ ones

(c) 7206 = ☐ thousands ☐ hundreds ☐ tens ☐ ones

(d) 4019 = ☐ thousands ☐ hundreds ☐ ten ☐ ones

(e) 8960 = ☐ thousands ☐ hundreds ☐ tens ☐ ones

(f) 1800 = ☐ thousand ☐ hundreds ☐ tens ☐ ones

(g) 7070 = ☐ thousands ☐ hundreds ☐ tens ☐ ones

(h) 3003 = ☐ thousands ☐ hundreds ☐ tens ☐ ones

12. Write the number name for each of the following numbers.

(a) 4687 (b) 2869 (c) 6380 (d) 7513 (e) 1029 (f) 8015

(g) 9406 (h) 6700 (i) 5002 (j) 4004 (k) 8070 (l) 9021

13. Write the numbers by observing the pattern carefully.

(a) 5077, 5078, 5079, ..., ..., ..., ...

(b) 6296, 6297, 6298, ..., ..., ..., ...

(c) 997, 998, 999, ..., ..., ..., ...

(d) 7007, 7008, 7009, ..., ..., ..., ...

Face Value of a Digit in a Number

The face value of a digit in a number is the value of the digit itself at whatever place it may be.

Thus, in the number 6897;

the face value of 7 is 7;

the face value of 9 is 9;

the face value of 8 is 8;

the face value of 6 is 6.

Place Value of a Digit in a Number

The place value of a digit in a number depends upon its position in the place value chart.

Consider the number 7348.

Arrange its digits in the place value chart as shown below.

Th	H	T	O
7	3	4	8

The place value of 8 = 8 ones = 8.

The place value of 4 = 4 tens = 40.

The place value of 3 = 3 hundreds = 300.

The place value of 7 = 7 thousands = 7000.

Remember: The place value of 0 is always 0, wherever it may be.

Numbers in Expanded Form

A number, when expressed as a sum of the place values of its digits is said to be in its expanded form.

Consider the number 9652.

Arrange its digits in the place value chart shown below:

Th	H	T	O
9	6	5	2

∴ 9652 = 9 thousands + 6 hundreds + 5 tens + 2 ones

= 9000 + 600 + 50 + 2.

Thus, the expanded form of 9652 is 9000 + 600 + 50 + 2.

We can also say that the short form of 9000 + 600 + 50 + 2 is 9652.

Successor of a Number

The number that comes just after a particular number is called its successor.

Clearly, the successor of a number is 1 more than the number.

Thus, the successor of 26 is 27;
the successor of 953 is 954, and so on.

Predecessor of a Number

The number that comes just before a particular number is called its predecessor.

Clearly, the predecessor of a number is 1 less than the number.

Thus, the predecessor of 49 is 48;

the predecessor of 836 is 835, and so on.

Remember: 0 has no predecessor.

Skip Counting

Suppose, starting with a given number we write some numbers with a fixed gap between two successive numbers, then such a counting is known as skip-counting.

Counting by twos means there is a gap of 2 between every two successive numbers.

Similarly, counting by fives means there is a gap of 5 between every two successive numbers and so on.

Solved Examples

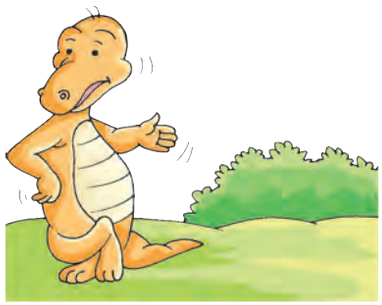
Example 1: Write the face value and place value of

(a) 8 in 5806 (b) 3 in 3869

Solution: (a) The face value of 8 in 5806 is 8.

Arrange the digits of 5806 in the place value chart as shown below.

Th	H	T	O
5	8	0	6



From the place value chart, we have,

the place value of 8 = 8 hundreds = 800.

(b) The face value of 3 in 3869 is 3.

Arrange the digits of 3869 in the place value chart as shown below.

Th	H	T	O
3	8	6	9

From the place value chart, we have,

the place value of 3 = 3 thousands = 3000.

Example 2: Write 5063 in expanded form.

Solution: Arrange the digits of the given numeral in the place value chart as shown below:

Th	H	T	O
5	0	6	3

$\therefore$ 5063 = 5 thousands + 0 hundreds + 6 tens + 3 ones

= 5000 + 0 + 60 + 3

= 5000 + 60 + 3.

Hence, the expanded form of 5063 is 5000 + 60 + 3.

Example 3: Write the following in short form.

(a) 2000 + 700 + 40 + 6

(b) 7000 + 400 + 5

(c) 5000 + 60 + 7

Solution: We have:

(a) 2000 + 700 + 40 + 6 = 2 thousands + 7 hundreds + 4 tens + 6 ones

= 2746.

(b) 7000 + 400 + 5 = 7 thousands + 4 hundreds + 0 tens + 5 ones

= 7405.

(c) 5000 + 60 + 7 = 5 thousands + 0 hundreds + 6 tens + 7 ones

= 5067.

Example 4: Write the successor of each of the following numbers.

(a) 379 (b) 1207 (c) 4999

Solution: The successor of a number is obtained by adding 1 to the given number. So,

(a) the successor of 379 is 380.

(b) the successor of 1207 is 1208.

(c) the successor of 4999 is 5000.

Example 5: Write the predecessor of each of the following numbers.

(a) 100 (b) 5693 (c) 9999

Solution: The predecessor of a number is 1 less than the given number. So,

(a) the predecessor of 100 is 99.

(b) the predecessor of 5693 is 5692.

(c) the predecessor of 9999 is 9998.

Example 6: Counting by threes, write seven numbers from 5082 onwards.

Solution: Starting from 5082, we go on adding 3.

$\therefore$ The required numbers are:

5082, 5085, 5088, 5091, 5094, 5097, 5100.

Example 7: Counting by fives, write six numbers from 7679 onwards.

Solution: Starting from 7679, we go on adding 5.

$\therefore$ The required numbers are:

7679, 7684, 7689, 7694, 7699, 7704.

Example 8: Counting by twenties, write four numbers from 8241 onwards.

Solution: Starting from 8241, we go on adding 20.

$\therefore$ The required numbers are:

8241, 8261, 8281, 8301.

Example 9: Counting by hundreds, write six numbers from 6735 onwards.

Solution: Starting from 6735, we go on adding 100.

$\therefore$ The required numbers are:

6735, 6835, 6935, 7035, 7135, 7235.

Example 10: Counting by thousands, write five numbers from 981 onwards.

Solution: Starting from 981, we go on adding 1000.

$\therefore$ The required numbers are:

981, 1981, 2981, 3981, 4981.

Exercise 3

1. Write the place value of 9 in 7869.
2. Write the place value of 3 in 5237.
3. Write the face value and the place value of 6 in 9576.
4. Write the place value of 0 in 6027.
5. Write the place value of 7 in 1798.
6. Write the place value of 9 in 9103.
7. Write the place value of 4 in 4923.
8. Find the difference between the place value and the face value of 2 in 6293.
9. Find the difference between the place value of 1 and the place value of 5 in the numeral 1057.
10. Find the difference between the place values of two fives in 7505.
11. Write the place value of each digit in 6851.
12. Write the place value of each digit in 4126.
13. Write the place value of each digit in 3015.
14. **Write each of the following in the expanded form**.

    (a) 1576 (b) 8019 (c) 3291 (d) 7002

    (e) 3205 (f) 6027 (g) 9157 (h) 2800

15. **Write each of the following in short form.**

    (a) 5000 + 200 + 40 + 3 (b) 9000 + 400 + 10 + 7

    (c) 7000 + 100 + 60 + 8 (d) 6000 + 300 + 50

    (e) 4000 + 50 + 6 (f) 3000 + 700 + 2

    (g) 1000 + 100 + 1 (h) 2000 + 30 + 5

16. **Fill in the blanks. One has been done for you.**

    (a) 1 thousand 2 hundreds 3 tens 5 ones = 1235

    (b) 4 thousands 7 hundreds 5 tens 6 ones = ...

    (c) 7 thousands 8 hundreds 6 tens 2 ones = ...

    (d) 5 thousands 0 hundreds 1 ten 9 ones = ...

    (e) 6 thousands 1 hundred 0 tens 5 ones = ...

    (f) 8 thousands 0 hundreds 0 tens 1 one = ...

17. Write the successor of each of the following numbers.

(a) 568 (b) 999 (c) 1269 (d) 2631 (e) 1099

(f) 5109 (g) 6799 (h) 8889 (i) 7000 (j) 9099

18. Write the predecessor of each of the following numbers.

(a) 700 (b) 867 (c) 1000 (d) 2200 (e) 5310

(f) 4080 (g) 4400 (h) 8000 (i) 7520 (j) 9610

19. Counting by twos, write the numbers from

(a) 3294 to 3304 (b) 7587 to 7601 (c) 995 to 1011

20. Counting by tens, write the numbers from

(a) 4880 to 4940 (b) 7887 to 7937 (c) 8993 to 9053

21. Counting by hundreds, write the numbers from

(a) 3790 to 4490 (b) 4999 to 5499 (c) 5801 to 6301

22. (a) Counting by thousands, write five numbers from 2578 onwards.

(b) Counting by thousands, write six numbers from 4609 onwards.

23. Look at the pattern and fill in the blanks.

(a) 4296, 4297, 4298, ..., ..., ..., ...

(b) 5093, 5095, 5097, ..., ..., ..., ..., ...

(c) 8179, 8189, 8199, ..., ..., ..., ..., ...

(d) 3707, 3807, 3907, ..., ..., ..., ..., ...

(e) 4593, 4592, 4591, ..., ..., ..., ..., ...

(f) 7205, 7203, 7201, ..., ..., ..., ..., ...

(g) 9331, 9321, 9311, ..., ..., ..., ..., ...

(h) 6401, 6301, 6201, ..., ..., ..., ..., ...

24. Fill in the blanks.

(a) ..... is the numeral whose place value always remains the same.

(b) The face value of 9 in 9801 is ..... .

(c) The place value of 7 in 5763 is ..... .

(d) The successor of a number is 1 ..... than the number.

(e) The predecessor of a number is 1 ..... than the number.

(f) ..... has no predecessor.

(g) The predecessor of the smallest 4-digit number is the ..... 3-digit number.

(h) The successor of the ..... 4-digit number is the smallest 5-digit number.

Comparison of Numbers

We have already learnt the method of finding the greater of the two given numbers upto 3 digits.

We follow the same rules for larger numbers.

Rule 1: To Compare Numbers with Different Numbers of Digits

In this case, out of the two given numbers, the one having more digits is the greater of the two. Thus, 1001 > 581; 2801 > 989 and so on.

Rule 2: To Compare Numbers with the Same Number of Digits

Step 1: First compare the digits at the leftmost place in both the numbers.

Step 2: If they are equal, compare the second digits from the left.

Step 3: If the second digits from the left are also equal, compare the third digits from the left.

Step 4: Continue until you find unequal digits at the corresponding places. Now, the number with greater such digit is the greater of the two.

Let us compare 7234 and 6895.

Both are 4-digit numbers.

Compare their digits at the leftmost place.

The digit is 7 in the first number and 6 in the second,

and, 7 > 6

So, 7234 > 6895.

Now, let us compare 5408 and 5470.

Both are 4-digit numbers.

Both have the same digit at thousands place, namely 5.

Both have the same digit at hundreds place, namely 4.

Let us compare their digits at tens place.

The digit is 0 in the first number and 7 in the second,

and, $0 < 7$.

So, $5408 < 5470$.

Ordering of Numbers

When two or more numbers are given, they can be compared using the above rules. Thus, we can arrange them from the smallest to the greatest (increasing order), or from the greatest to the smallest (decreasing order).

Ascending order: When a set of given numbers is arranged from the smallest to the greatest, they are said to be in ascending order.

Descending order: When a set of given numbers is arranged from the greatest to the smallest, they are said to be in descending order.

How to write the Smallest Number, using given digits, each only once without Repetition?

Case I: When none of the given digits is zero

In this case, we arrange the given digits in ascending order.

Examples:

(a) The smallest 3-digit number formed by using the digits 3,6 and 2 is 236.

(b) The smallest 4-digit number formed by using the digits 9,7, 1 and 5 is 1579.

Case II: When one of the given digits is zero

In this case, we put 0 at second place from the left. We then fill the remaining places from left to right by the remaining digits in an ascending order.

Examples:

(a) The smallest 3-digit number formed by using the digits 0, 1 and 2 is 102.

(b) The smallest 4-digit number formed by using the digits 9, 5, 3 and 0 is 3059.

How to write the Greatest Number, using given digits, each only once without Repetition?

To form the greatest number, we arrange the given digits in descending order.

Examples:

(a) The greatest 3-digit number formed by using the digits 3, 6 and 9 is 963.

(b) The greatest 4-digit number formed by using the digits 0, 1, 2 and 4 is 4210.

Solved Examples

Example 1: Arrange the following numbers in ascending order.

3564, 4003, 987, 9078, 865

Solution: Let us arrange the given numbers in a place value chart.

Here, there are two 3-digit numbers and three 4-digit numbers.

Th	H	T	O
3	5	6	4
4	0	0	3
	9	8	7
9	0	7	8
	8	6	5

Among 3-digit numbers, 865 is smaller than 987.

Among 4-digit numbers, the smallest is 3564, then 4003 and lastly comes 9078.

$\therefore$ 865 < 987 < 3564 < 4003 < 9078.

Hence, the given numbers in ascending order are:

865, 987, 3564, 4003 and 9078.

Example 2: Arrange the following numbers in descending order.

7053, 7530, 5073, 537, 357, 3057

Solution: Let us arrange the given numbers in a place value chart.

Th	H	T	O
7	0	5	3
7	5	3	0
5	0	7	3
	5	3	7
	3	5	7
3	0	5	7

Here, there are two 3-digit numbers and four 4-digit numbers.

Among 4-digit numbers, the greatest is 7530, then 7053, then 5073 and lastly comes 3057.

Among 3-digit numbers, the greater is 537 and then comes 357.

$\therefore$ 7530 > 7053 > 5073 > 3057 > 537 > 357

Hence, the given numbers in descending order are:

7530, 7053, 5073, 3057, 537 and 357.

Exercise 4

1. Compare the numbers in the each of the following pairs and write the appropriate symbol > or < in each box.

(a) 603 ☐ 360

(b) 203 ☐ 302

(c) 999 ☐ 1001

(d) 7129 ☐ 7219

(e) 4567 ☐ 4576

(f) 4032 ☐ 4320

(g) 9201 ☐ 9102

(h) 3594 ☐ 3495

(i) 603 ☐ 6003

(j) 6070 ☐ 7060

(k) 8296 ☐ 8306

(l) 2001 ☐ 2010

(m) 2654 ☐ 4265

(n) 3545 ☐ 3554

2. Encircle the largest number. One has been done for you.

(a) 3546, 5364, 4653, 6345, 5436, 6435

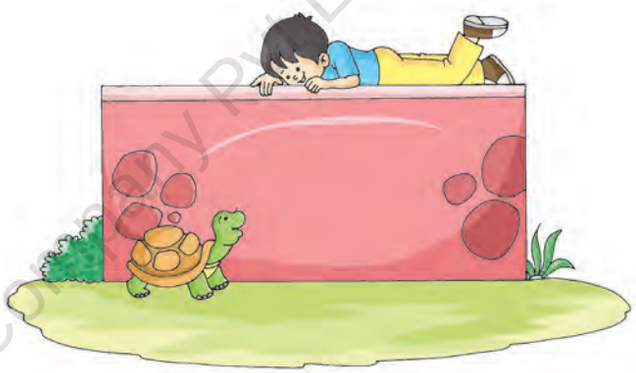
(b) 3042, 4032, 2034, 4023, 4320, 4203

(c) 2651, 2561, 6215, 6521, 1265, 1562

(d) 4982, 2984, 8249, 4928, 8429, 8294

(e) 5160, 6051, 6510, 5601, 5061, 6150

(f) 1699, 9619, 6991, 9691, 6119, 9169



3. Encircle the smallest number. One has been done for you.

(a) 7507, 7570, 7057, 5770, 7075, 5077

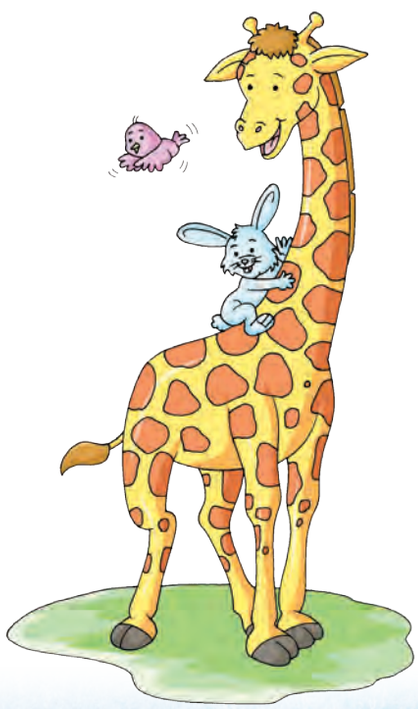
(b) 4360, 3640, 6304, 3460, 6403, 4036

(c) 1030, 1300, 1003, 3001, 301, 3010

(d) 2563, 3625, 3526, 3265, 3652, 3602

(e) 5129, 4289, 5209, 5912, 8029, 5921

(f) 2358, 3205, 1735, 2013, 1553, 1357



4. Arrange in ascending order.

(a) 3042, 342, 4032, 4320, 432, 324

(b) 4635, 3546, 5436, 4356, 635, 563

(c) 5762, 963, 639, 6326, 2673, 396

(d) 2003, 1001, 1375, 3157, 571, 1573

(e) 4963, 6349, 4639, 3694, 6493, 3496

(f) 1909, 1099, 199, 1990, 1090, 1009

(g) 3508, 908, 8503, 5308, 1008, 8305

5. Arrange in descending order.

(a) 1001, 1110, 1011, 1100, 101

(b) 3062, 3602, 203, 402, 1206, 2306

(c) 4256, 163, 596, 3052, 5203, 659

(d) 5217, 1725, 1275,1527, 2175, 2571

(e) 7126, 6127, 7216, 6721, 7612, 7162

(f) 5034, 3405, 5304, 5043, 5403, 3504

(g) 1625, 5261, 2651, 1516, 6152, 2156

6. Write four 3-digit numbers formed by using the digits 4, 0 and 7.

7. Write six 4-digit numbers formed by using the digits 8, 6, 3 and 0, each beginning with 8.

8. Write the largest 4-digit number formed by using the digits.

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

9. Write the smallest 4-digit number formed by using the digits.

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

Things to Remember

1. The smallest 4-digit number is 1000. The largest 4-digit number is 9999.
2. In a 4-digit number, the fourth place from the right is the thousands place.
3. The place value chart upto four places is given below:

Thousands	Hundreds	Tens	Ones
Th	H	T	O

4. The face value of a digit in a number is the value of the digit itself at whatever place it may be.
5. The place value of a digit depends on its position in the number.
   (a) The place value of 3 at ones place is 3 ones = 3.
   (b) The place value of 3 at tens place is 3 tens = 30.
   (c) The place value of 3 at hundreds place is 3 hundreds = 300.
   (d) The place value of 3 at thousands place is 3 thousands = 3000.
6. The place value of 0 is always 0.
7. A number, when expressed as a sum of the place values of its digits is said to be in expanded form.
8. The successor of a number is 1 more than the number.
9. The predecessor of a number is 1 less than the number.
10. If two numbers are given, the number with more digits is greater than the other.
11. Suppose two numbers with same number of digits are given.
    To compare them, we take following steps.

    Step 1: Compare their digits at the leftmost place.

    Step 2: If they are same, compare their digits at the second place from the left.

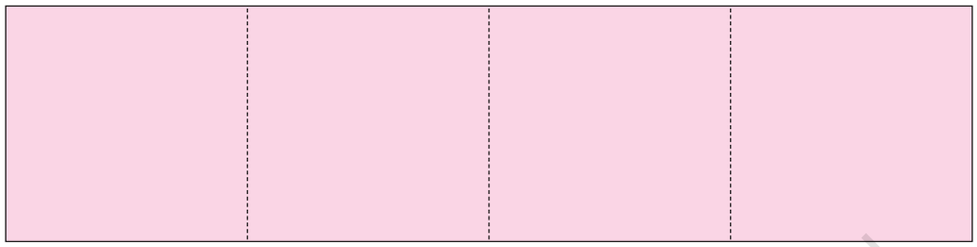
    Step 3: Continue till you get two different digits at the corresponding places.

    The number with smaller digit at this place is smaller.
12. Numbers in ascending order means from the smallest to the greatest.
13. Numbers in descending order means from the greatest to the smallest.

Activity Time

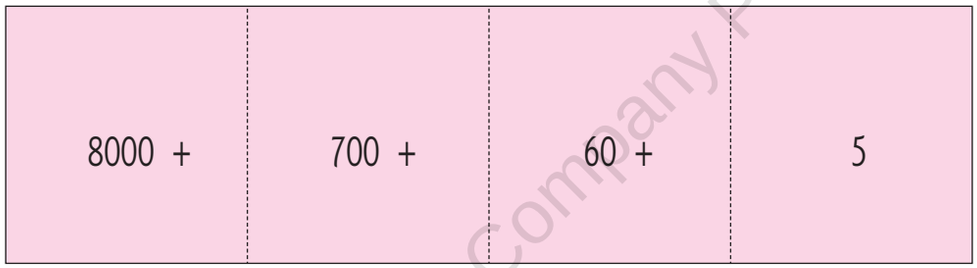
Activity to Demonstrate Expanded and Short Form of a Numeral

Take an origami sheet and cut out a rectangular strip. Fold this strip into four equal parts as shown.

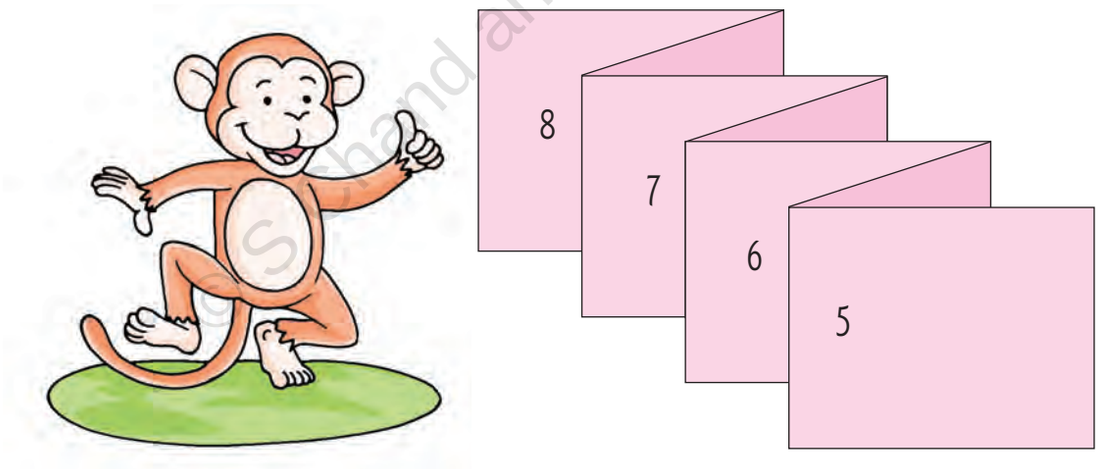


Consider a number, say, 8765.

Write the expanded form of 8765 on the strip as shown below:



Now, fold the strip as shown.



The strip when folded shows the short form of the number.

When unfolded, the strip shows the expanded form of the number.

Repeat the above activity with more numbers.

Assessment 1

QUESTION BAG 1

(Objective Type Questions)

Tick (✓) the correct answer.

1. The place value of the digit 9 in 7890 is

(a) 9 ☐ (b) 90 ☐ (c) 10 ☐ (d) 100 ☐

2. Which of the following numbers has a digit greater than 1 in the hundreds place?

(a) 3072 ☐ (b) 1798 ☐ (c) 9165 ☐ (d) 5005 ☐

3. The smallest 4-digit number is

(a) 1000 ☐ (b) 9999 ☐ (c) 9000 ☐ (d) 1111 ☐

4. How many 3-digit numbers are formed by using the digits 0,1, 2?

(a) 2 ☐ (b) 6 ☐ (c) 4 ☐ (d) 210 ☐

5. 6000 + 0 + 80 + 2 = ?

(a) 682 ☐ (b) 6082 ☐ (c) 6802 ☐ (d) 6820 ☐

6. Sum of the odd numbers between 5 and 12 is

(a) 7 ☐ (b) 16 ☐ (c) 17 ☐ (d) 27 ☐

7. The difference between the place value and face value of 2 in 6236 is

(a) 0 ☐ (b) 2 ☐ (c) 198 ☐ (d) 200 ☐

8. The place value of 0 in 6309 is

(a) 0 ☐ (b) 1 ☐ (c) 10 ☐ (d) 100 ☐

9. In which one of the following numbers, the digits cannot be rearranged to get another 4-digit number?

(a) 6000 ☐ (b) 5005 ☐ (c) 1296 ☐ (d) 8877 ☐

10. Saloni drew a number grid as shown below.

1	2		4	5
	7	8		10
11		13	14	
16	17		19	20
	22	23		25

What rule did she use to create this pattern?

(a) Shade all even numbers

(b) Shade all odd numbers

(c) Shade numbers when counting by 3s

(d) Shade numbers when counting by 4s

11. `Which number will come next in the following series?

200, 185, 170, 155, ...

(a) 140 ☐ (b) 145 ☐ (c) 150 ☐ (d) 135 ☐

12. Which number will come next in the following series?

5, 10, 20, 35, 55, ...

(a) 70 ☐ (b) 75 ☐ (c) 80 ☐ (d) 85 ☐

13. Which number will come next in the following series?

200, 190, 170, 140, ...

(a) 130 ☐ (b) 120 ☐ (c) 110 ☐ (d) 100 ☐

14. How many 3-digit numbers can be formed using 9, 6, 3 only once in a number?

(a) 2 ☐ (b) 4 ☐ (c) 6 ☐ (d) None of these ☐

15. Tanya made a 4-digit number using the digits 3, 6, 4 and 9. Her number has the biggest digit at hundreds place. Which of the following is her number?

(a) 3469 ☐ (b) 3694 ☐ (c) 3964 ☐ (d) 364 ☐

16. The difference between the place values of two 4s in the number 4649 is

(a) 990 ☐ (b) 3960 ☐ (c) 3600 ☐ (d) 900 ☐

17. Which of the following sets of numbers is in the correct ascending order?

(a) 6576, 6657, 6675, 6567, 6765, 6756 ☐

(b) 6567, 6657, 6756, 6576, 6675, 6765 ☐

(c) 6576, 6567, 6675, 6657, 6756, 6765 ☐

(d) 6567, 6576, 6657, 6675, 6756, 6765 ☐

18. Choose the odd one out.

(a) 23 ☐ (b) 65 ☐ (c) 48 ☐ (d) 19 ☐

19. In which of the following patterns the next number is found by doubling the number before it?

(a) 5, 10, 15, 20, ... ☐ (b) 5, 10, 20, 40, ... ☐

(c) 5, 7, 9, 11, ... ☐ (d) 5, 9, 13, 17, ... ☐

20. In which of the following number, the place value of the coloured digit is not equal to its face value?

(a) 53**0**6 ☐ (b) 615**2** ☐ (c) 8**3**21 ☐ (d) 597**4** ☐

QUESTION BAG 2

1. Encircle the numbers with

(a) 3 in the ones place	253	6328	4731	83	3182
(b) 9 in the thousands place	3936	9584	2395	9640	2943
(c) 1 in the tens place	1384	617	15	7541	910
(d) 5 in the hundreds place	3561	935	157	2571	503

2. Write the number names of the following numerals.

(a) 1219 (b) 8015 (c) 5102 (d) 7003

(e) 9835 (f) 6554 (g) 9999 (h) 1011

3. Fill in the blanks.

(a) 10 ones = ☐ ten (b) 10 tens = ☐ hundred

(c) 10 hundreds = ☐ thousand (d) 100 ones = ☐ tens

4. Fill in the missing numbers in the given sequence.

(a) 8192, 8194, ☐, 8198, ☐, ☐

(b) 7775, 7780, ☐, ☐, 7795, ☐

(c) 9050, 9070, ☐, ☐, ☐, 9150

(d) 5525, 5550, ☐, ☐, 5625, ☐

5. Write the place value of the coloured digit in each of the following numerals.

(a) 9653 (b) 8742 (c) 3078

(d) 4726 (e) 1374 (f) 5691

6. Complete the table with the correct numbers.

	Predecessor	Number	Successor
(a)	.....	3000	.....
(b)	.....	2754	.....
(c)	.....	5649	.....
(d)	.....	1009	.....
(e)	.....	6765	.....
(f)	.....	9089	.....

7. Write the predecessor and the successor of the greatest 4-digit number.

8. State whether each of the following statements is true or false.

(a) The place value of 0 in 5402 is 10. .....

(b) The greatest 3-digit number is the predecessor of the smallest 4-digit number. .....

(c) The expanded form of a number tells the place value of each of its digits. .....

9. Compare the following numbers.

(a) 2861 ◯ 2681 (b) 3773 ◯ 3377 (c) 9099 ◯ 9909

(d) 8818 ◯ 8188 (e) 9045 ◯ 9405 (f) 8236 ◯ 8326

(g) 5215 ◯ 5251 (h) 6234 ◯ 6324

10. Arrange the following numbers in ascending order.

(a) 5009, 5900, 5099, 5909, 5090

(b) 9901, 9091, 9190, 9910, 9109

11. Using the given digits, form the greatest and the smallest 4-digit numbers.

	Digits	Greatest Number	Smallest Number
(a)	6, 5, 9, 1	.....	.....
(b)	0, 9, 7, 3	.....	.....
(c)	7, 2, 9, 8	.....	.....
(d)	6, 0, 4, 9	.....	.....

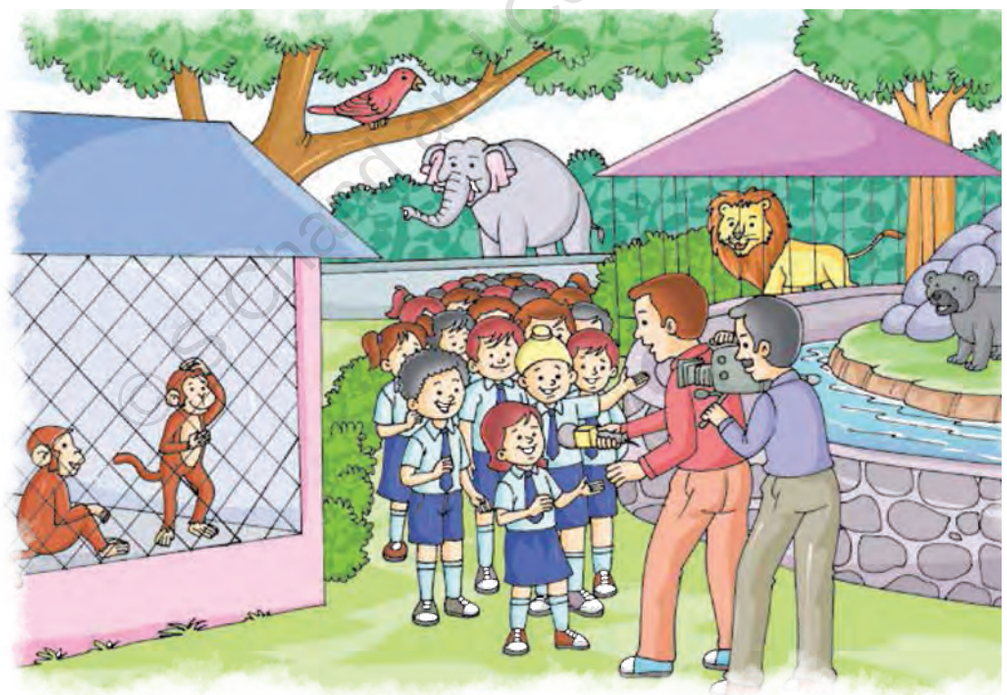
12. Write:

(a) the largest 4-digit even number.

(b) the smallest 4-digit odd number.

13. (a) Form the greatest 4-digit number using different digits.

(b) Form the smallest 4-digit number using different digits.



3 Roman Numerals

Introduction

The system of Roman numerals dates back to the Roman civilization that existed long before the Hindu-Arabic numerals came into being. Though Roman numerals are now not used in mathematical calculations, yet we may sometimes notice them in watches, clocks and calendars.

There are seven basic symbols to write any Roman numeral.

These symbols with their corresponding Hindu-Arabic numerals are given below:

Roman Numeral	I	V	X	L	C	D	M
Hindu-Arabic Numeral	1	5	10	50	100	500	1000

In the Roman system, there is no symbol for zero. This is also not a place value system.

Using the above seven symbols, we may form Roman numerals for all numbers by adopting certain rules. However, here we shall discuss the rules for usage of the first three symbols - I, V and X - and form Roman numerals upto 39.

Rule 1: Repetition of a Roman numeral means addition.

Examples:

II = 1 + 1 = 2, III = 1 + 1 + 1 = 3,

XX = 10 + 10 = 20, XXX = 10 + 10 + 10 = 30.

Caution: (1) Only I and X can be repeated.

The numeral V is never repeated.

(2) No numeral can be repeated more than three times.

Rule 2: A smaller numeral written to the right of a larger numeral is always added to the larger numeral.

Examples:

VI = 5 + 1 = 6, VII = 5 + 1 + 1 = 7, VIII = 5 + 1 + 1 + 1 = 8,

XI = 10 + 1 = 11, XII = 10 + 1 + 1 = 12, XIII = 10 + 1 + 1 + 1 = 13.

Rule 3: A smaller numeral written to the left of a larger numeral is always subtracted from the larger numeral.

Examples:

IV = 5 – 1 = 4, IX = 10 – 1 = 9.

Caution: (1) I can be subtracted from V and X.

(2) The numeral V is never subtracted.

Rule 4: For numbers beyond 10, we first write the number in groups of 10s and 1s and then form the Roman numeral corresponding to the given number.

Examples:

11 = 10 + 1 = XI, 12 = 10 + 2 = XII, 13 = 10 + 3 = XIII,

14 = 10 + 4 = XIV, 15 = 10 + 5 = XV, 16 = 10 + 6 = XVI,

20 = 10 + 10 = XX, 24 = 10 + 10 + 4 = XXIV,

30 = 10 + 10 + 10 = XXX, 39 = 10 + 10 + 10 + 9 = XXXIX.

Using the above rules, we may write the Roman numerals for Hindu-Arabic numerals from 1 to 39 as shown below:

Hindu-Arabic Numerals	Roman Numerals	Hindu-Arabic Numerals	Roman Numerals	Hindu-Arabic Numerals	Roman Numerals	Hindu-Arabic Numerals	Roman Numerals
1	I	11	XI	21	XXI	31	XXXI
2	II	12	XII	22	XXII	32	XXXII
3	III	13	XIII	23	XXIII	33	XXXIII
4	IV	14	XIV	24	XXIV	34	XXXIV
5	V	15	XV	25	XXV	35	XXXV
6	VI	16	XVI	26	XXVI	36	XXXVI
7	VII	17	XVII	27	XXVII	37	XXXVII
8	VIII	18	XVIII	28	XXVIII	38	XXXVIII
9	IX	19	XIX	29	XXIX	39	XXXIX
10	X	20	XX	30	XXX		

Since X cannot be repeated more than three times, we cannot write 40 as XXXX.

So, we represent 40 in Roman numerals as under:

40 = 50 – 10 = XL.

Exercise 5

1. Write the Roman numerals for the following.

(a) 6 (b) 8 (c) 12 (d) 14 (e) 26

(f) 28 (g) 33 (h) 34 (i) 38 (j) 39

2. Write the Hindu-Arabic numerals for the following.

(a) IX (b) XVI (c) XXVI (d) XIX (e) XXXVI

(f) XXVIII (g) XIII (h) XXIX (i) XVIII (j) XX

3. Fill in the placeholders with correct symbol >, < or =.

(a) XXVI ◯ 24 (b) XI ◯ 9

(c) XIX ◯ 19 (d) XXXV ◯ 34

(e) X ◯ 11 (f) XXIX ◯ 29

4. Which of the following are meaningless?

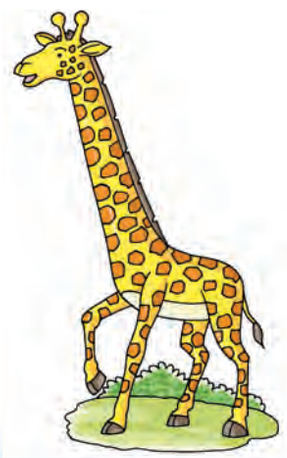
(a) XIX (b) IXVI (c) VV (d) XX

(e) VX (f) XIV (g) XIIV (h) XIIII

5. Solve and write the answers in Roman numerals.

(a) XI + XI (b) VI + IV (c) VII + XVIII

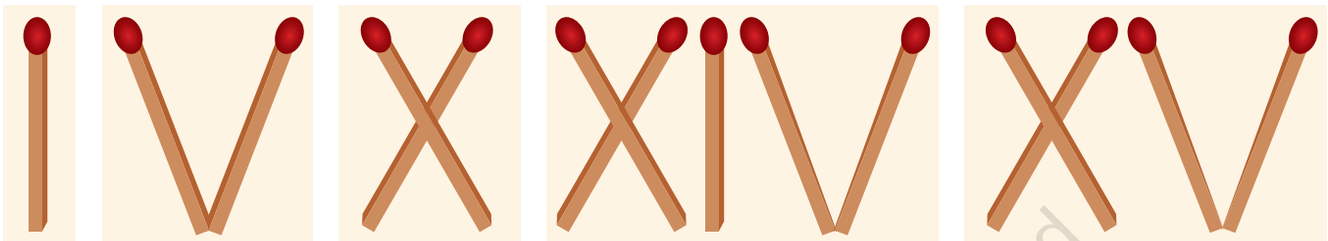
(d) XI – V (e) XVI – VIII (f) XXX – XXI



Activity Time

Take a box of matchsticks and try to form Roman numerals for all Hindu-Arabic numerals from 1 to 40.

Some numerals have been shown below to guide you in the formation process.

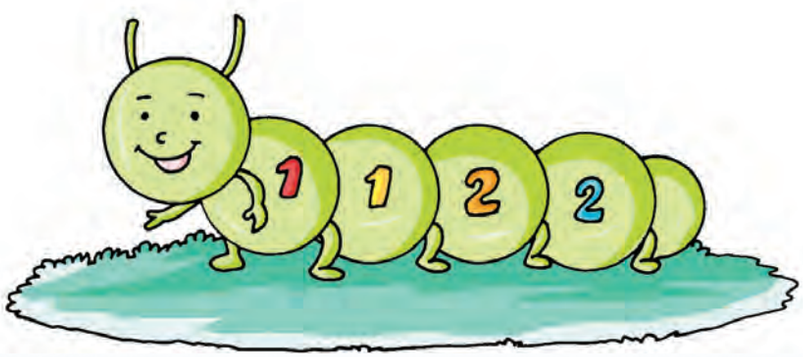


Count the number of matchsticks needed to form each numeral and then prepare a chart mentioning the numeral and number of matchsticks required as shown below:

Hindu-Arabic Numeral	Roman Numeral	Number of Matchsticks used
1	I	
2	II	
3	III	
4	IV	
5	V	

and so on.

Which number required maximum number of matchsticks? .....



Assessment 2

QUESTION BAG 1

(Objective Type Questions)

Tick (✓) the correct answer.

1. The number which cannot be represented by Roman numerals is

(a) 0 ☐ (b) 11 ☐ (c) 99 ☐ (d) None of these ☐

2. The Roman numeral for 8 is

(a) IIX ☐ (b) IIIIIIII ☐ (c) VIII ☐ (d) None of these ☐

3. In Roman numerals, X can be used at the most

(a) 1 time ☐ (b) 2 times ☐ (c) 3 times ☐ (d) 4 times ☐

4. The Roman numeral that represents 100 is

(a) L ☐ (b) C ☐ (c) D ☐ (d) M ☐

5. Which one of the following is the correct statement?

(a) XXV < 22 ☐ (b) XXL = 30 ☐ (c) XXIX < 30 ☐ (d) LL = 100 ☐

6. Which of the following is a valid Roman numeral?

(a) IXIV ☐ (b) XIXX ☐ (c) XVX ☐ (d) XIX ☐

7. The 'V' in Roman numerals can be represented only

(a) once ☐ (b) twice ☐ (c) thrice ☐ (d) four times ☐

8. XVI + VII = ?

(a) XXIII ☐ (b) XXIV ☐ (c) XXVI ☐ (d) XXVII ☐

9. XXX – XV = ?

(a) XX ☐ (b) XXV ☐ (c) XV ☐ (d) X ☐

10. The correct Roman numeral for 17 is

(a) VVVII ☐ (b) XVII ☐ (c) IIIXX ☐ (d) XXVI ☐

11. The correct Roman numeral for 29 is

(a) XXIX ☐ (b) IXXX ☐ (c) XXVIIII ☐ (d) IXXL ☐

12. Which of the following Roman numerals is meaningless?

(a) XVIII ☐ (b) IXIV ☐ (c) XXIV ☐ (d) XXIX ☐

QUESTION BAG 2

1. Fill in the missing numerals in the boxes.

Hindu-Arabic Numeral	26		39		13	
Roman Numeral		XVII		XXIX		XIV

2. Compare:

(a) XXXIV ◯ 29 + 6

(b) 16 + 8 ◯ XXVI

(c) XXXIII ◯ 50 – 18

(d) 26 – 19 ◯ IX

3. In each of the following pairs, only one Roman numeral is correct. Circle the correct one.

(a) XXIIII, XXIV

(b) XXX, XXL

(c) X, VV

(d) XVIIII, XIX

4. Complete the following sequences.

(a) XXIII, ☐, ☐, XXVI, ☐, ☐, ☐, XXX

(b) XV, ☐, ☐, ☐, ☐, XX

(c) XXXIV, ☐, ☐, ☐, XXXVIII, ☐, ☐

5. Add or subtract and write the answer in Roman numerals.

(a) V + V = ☐

(b) XI – V = ☐

(c) XV + IX = ☐

(d) XXI – IX = ☐

(e) XX – VI = ☐

(f) XXXII – VIII = ☐

6. Write:

(a) the Roman numeral for 50. ☐

(b) a Roman numeral that cannot be repeated. ☐

(c) the Roman numeral for 40. ☐

4 Addition

In Class II, we have learnt how to add two or more 2-digit and 3-digit numbers. We shall now extend the same idea add to 4-digit numbers.

Addends and the sum: When two or more numbers are added, each of the numbers to be added is known as an addend and the result obtained after addition is called the sum.

Addition without Carrying

How to Add?

Step 1: Arrange the digits of the given numbers in columns of thousands, hundreds, tens and ones.

Step 2: Add columnwise.

First add the ones, then add the tens, followed by the hundreds and finally add the thousands.

Solved Examples

Example 1: Add 5461 and 2137.

Solution: Arranging the given numbers in columns and adding columnwise, we get:

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

Explanation:

Adding ones : 1 one + 7 ones = 8 ones
Write 8 under ones column.

Adding tens : 6 tens + 3 tens = 9 tens
Write 9 under tens column.

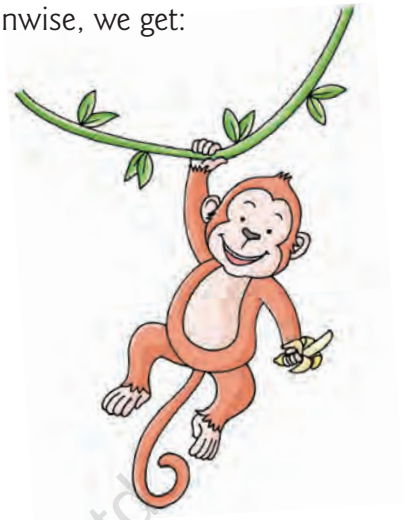
Adding hundreds : 4 hundreds + 1 hundred = 5 hundreds
Write 5 under hundreds column.

Adding thousands : 5 thousands + 2 thousands = 7 thousands
Write 7 under thousands column.

Hence, the sum of the given numbers is 7598.

Example 2: Find the sum: 5142 + 1203 + 2631.

Solution: Arranging the given numbers in columns and adding columnwise, we get:



	Th	H	T	O
	5	1	4	2
	1	2	0	3
+	2	6	3	1
	8	9	7	6

Explanation:

Adding ones : 2 + 3 + 1 = 6. Write 6 under ones column.

Adding tens : 4 + 0 + 3 = 7. Write 7 under tens column.

Adding hundreds : 1 + 2 + 6 = 9. Write 9 under hundreds column.

Adding thousands : 5 + 1 + 2 = 8. Write 8 under thousands column.

Hence, the sum of the given numbers is 8976.

Exercise 6

Find the sum.

1.

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

2.

	Th	H	T	O
	4	9	2	6
+	5	0	6	3

3.

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

4.

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

5.

	Th	H	T	O
	4	5	3	6
+	1	3	4	2

6.

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

7.

	Th	H	T	O
	5	4	2	1
+	4	3	6	2

8.

	Th	H	T	O
	6	3	0	2
+	2	4	7	5

Add the following.

9.

	Th	H	T	O
	1	2	4	3
	4	6	3	5
+		1	0	1

10.

	Th	H	T	O
	2	3	5	4
	1	0	2	3
+		5	1	2

11.

	Th	H	T	O
	3	4	2	1
	4	2	5	3
+		3	1	4

12.

	Th	H	T	O
	6	5	2	3
	1	2	5	4
+		2	1	2

13.

	Th	H	T	O
	3	2	1	4
	2	3	2	1
+		2	6	3

14.

	Th	H	T	O
	5	3	2	4
		6	3	0
+			4	5

15.

	Th	H	T	O
	5	6	3	2
			5	4
+		3	0	2

16.

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

Arrange in columns and find the sum.

17. 2435 + 132

18. 6230 + 356 + 13

19. 6241 + 1326 + 432

20. 2401 + 1036 + 101 + 60

Arrange in columns and add.

21. 3562 and 4326

22. 1405, 231, 42 and 11

23. 6381, 2102 and 1000

24. 5360, 407, 111 and 21

Addition with Carrying

The concept will be clear from the following examples.

Solved Examples

Example 1: Add 4378 and 3764.

Solution: Arranging the given numbers in columns and adding columnwise, we get:

	Th	H	T	O	
	(1)	(1)	(1)		← Carry
	4	3	7	8	
+	3	7	6	4	
	8	1	4	2	

Explanation:

Adding ones : 8 ones + 4 ones = 12 ones
= 10 ones + 2 ones
= 1 ten + 2 ones.
Write 2 under ones column.
Carry over 1 ten to tens column.

Adding tens : 1 ten (carried over) + 7 tens + 6 tens = 14 tens
= 10 tens + 4 tens
= 1 hundred + 4 tens.
Write 4 under tens column.
Carry over 1 hundred to hundreds column.

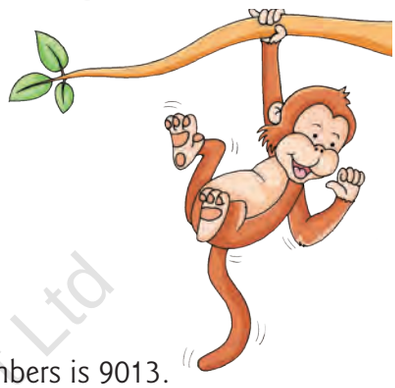
Adding hundreds : 1 hundred (carried over) + 3 hundreds + 7 hundreds
= 11 hundreds
= 10 hundreds + 1 hundred
= 1 thousand + 1 hundred
Write 1 under hundreds column.
Carry over 1 thousand to thousands column.

Adding thousands : 1 thousand (carried over) + 4 thousands + 3 thousands = 8 thousands.
Write 8 under thousands column.
Hence, the sum of the given numbers is 8142.

Example 2: Find the sum: 4576 + 2784 + 1653.

Solution: Arranging the given numbers in columns and adding columnwise, we get:

	Th	H	T	O	
	(2)	(2)	(1)		← Carry
	4	5	7	6	
	2	7	8	4	
+	1	6	5	3	
	9	0	1	3	



Hence, the sum of the given numbers is 9013.

Example 3: Find the sum: 5378 + 689 + 204 + 67.

Solution: Arranging the given numbers in columns and adding columnwise, we get:

	Th	H	T	O	
	(1)	(2)	(2)		← Carry
	5	3	7	8	
		6	8	9	
		2	0	4	
+			6	7	
	6	3	3	8	

Hence, the sum of the given numbers is 6338.

Exercise 7

Find the sum.

1.

	Th	H	T	O
	7	6	3	5
+	1	3	6	5

2.

	Th	H	T	O
	7	9	8	9
+	1	1	1	1

3.

	Th	H	T	O
	3	7	0	8
+	4	6	0	9

4.

	Th	H	T	O
	3	5	6	8
+	5	8	9	5

5.

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

6.

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

7.

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

8.

	Th	H	T	O
	5	8	6	7
+	3	6	5	4

Add the following.

9.

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

10.

	3	5	6	7
	1	9	9	4
+	4	2	3	5

11.

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

12.

	6	3	5	7
	2	5	4	9
+		6	7	8

13.

	5	8	6	9
		3	7	4
+	3	5	8	6

14.

	6	8	7	9
		4	5	6
+		7	3	4

15.

	6	9	8	4
			2	9
		5	3	6
+		2	0	8

16.

	7	1	6	5
		6	7	8
			4	6
+	1	0	5	3

Find the sum.

17. 1378 + 2659 + 1235

18. 4059 + 816 + 1977

19. 1998 + 2146 + 99 + 9

20. 3276 + 689 + 78 + 127

Arrange in columns and add.

21. 3047, 2964 and 3782

22. 2165, 3978, 459 and 78

23. 3874, 487, 96 and 1065

24. 8888, 777, 66, 155 and 8

Fill in the missing numerals.

25.

	□	4	□	3
+	6	□	6	□
	9	0	2	1

26.

	5	□	8	□
+	2	3	□	9
	□	1	6	6

27.

	1	3	□	□
+	□	□	6	8
	9	3	1	7

28.

	6	□	□	4
+	1	7	9	□
	□	0	8	2

29.

	□	2	□	7
+	1	8	9	□
	5	□	8	3

Properties of Addition

I. Order Property or Commutative Property for Addition

Find the sum: 3265 + 2678.

Also, find the sum: 2678 + 3265.

What do you conclude?

We have:

		(1)	(1)	← Carry
	3	2	6	5
+	2	6	7	8
	5	9	4	3

and

		(1)	(1)	← Carry
	2	6	7	8
+	3	2	6	5
	5	9	4	3

$\therefore$ 3265 + 2678 = 5943.

And, 2678 + 3265 = 5943.

Conclusion: 3265 + 2678 = 2678 + 3265.

The sum of two numbers does not change when the order of the addends is changed.

This is called the order property or commutative property for addition of numbers.

II. Grouping Property or Associative Property for Addition

Find the sum: (1368 + 2452) + 1073.

Also, find the sum: 1368 + (2452 + 1073).

What do you conclude?

We have:

1368 + 2452 = 3820

$\therefore$ (1368 + 2452) + 1073

= 3820 + 1073

= 4893.

And, 2452 + 1073 = 3525

$\therefore$ 1368 + (2452 + 1073)

= 1368 + 3525

= 4893.

		(1)	(1)	← Carry
	1	3	6	8
+	2	4	5	2
	3	8	2	0

+

	3	8	2	0
+	1	0	7	3
	4	8	9	3

		(1)		← Carry
	2	4	5	2
+	1	0	7	3
	3	5	2	5

+

Carry →		(1)		
	1	3	6	8
+	3	5	2	5
	4	8	9	3

Conclusion: (1368 + 2452) + 1073 = 1368 + (2452 + 1073).

The sum of three or more numbers does not change even when their grouping is changed.

This is known as the grouping property or associative property for addition of numbers.

III. Additive Property for Zero

Find the sums: 1674 + 0 and 0 + 1674.

	Th	H	T	O
	1	6	7	4
+				0
	1	6	7	4

and

	Th	H	T	O
				0
+	1	6	7	4
	1	6	7	4

We have:

∴ 1674 + 0 = 1674 and 0 + 1674 = 1674.

The sum of a number and 0 is the number itself.

This is called the additive property of 0.

Exercise 8

Fill in the blanks.

1. 2357 + 1876 = 1876 + ...

2. 4689 + 1831 = ... + 4689

3. ..... + 2391 = 2391 + 5137

4. 1064 + ... = 6397 + 1064

5. ..... + 3716 = 3716

6. 5965 + ... = 5965

7. (1008 + 999) + 1066 = ... + (999 + 1066)

8. 1938 + (2346 + 1650) = (1938 + 2346) + ...

9. (2346 + 1530) + 1734 = ... + (1530 + 1734)

10. (4375 + 1625) + 1595 = (1625 + ...) + 1595

11. Find the sum by suitable grouping.

(a) 53 + 42 + 47 + 58

(b) 44 + 34 + 56 + 66

(c) 291 + 378 + 109 + 122

Word Problems

Example 1: Mr Khanna purchased a washing machine for ₹ 5468 and a geyser for ₹ 3645 from a shop. How much money he has to pay for both the articles?

Solution: Cost of the washing machine = ₹ 5468

Cost of the geyser = ₹ 3645

Total cost of both the articles = ₹ (5468 + 3645)

= ₹ 9113

Hence, Mr Khanna has to pay ₹ 9113 in all.

	(1)	(1)	(1)	←	Carry
	5	4	6	8	
+	3	6	4	5	
	9	1	1	3	

Example 2: There are 4573 men, 3968 women and 1436 children in a town. What is the population of that town?

Solution: Number of men in the town = 4573

Number of women in the town = 3968

Number of children in the town = 1436

Total population of the town = 4573 + 3968 + 1436

= 9977

Hence, the total population of the town is 9977.

	(1)	(1)	(1)	←	Carry
	4	5	7	3	
	3	9	6	8	
+	1	4	3	6	
	9	9	7	7	

Example 3: In a gram panchayat election, there were three candidates. They got 3587 votes, 2874 votes and 708 votes respectively. If 59 votes were found invalid, how many votes were polled in all?

Solution: Number of votes polled to first candidate = 3587

Number of votes polled to second candidate = 2874

Number of votes polled to third candidate = 708

Number of invalid votes = 59

Total number of votes polled = 3587 + 2874 + 708 + 59

= 7228

Hence, the number of votes polled is 7228.

Carry →	(2)	(2)	(2)		
	3	5	8	7	
	2	8	7	4	
		7	0	8	
+			5	9	
	7	2	2	8	

Exercise 9

1. There are 2576 boys and 1894 girls studying in a school. What is the total number of pupils in the school?

2. Total monthly expenditure in Mr Jain's family is ₹ 7385. If they save ₹ 1895 per month, what is their monthly income?

3. On Kunal's admission in a school, his father paid ₹ 2758 as fees, spent ₹ 1367 on his books and ₹ 975 on his school uniform. How much money did he spend in all?

4. If 4508 men, 2987 women and 1395 children live in a village, what is the total population of the village?

5. In an orchard, there are 1863 coconut trees, 1077 mango trees, 978 tamarind trees and 169 orange trees. How many trees are there in all in the orchard?

6. The number of visitors to a museum on four consecutive days of a week were 2384, 3538, 1835 and 679 respectively. It remained closed for the next three days. What is the total number of visitors during the week?

7. In a school library, there are 1968 books on English, 2056 books on Tamil, 1735 books on Mathematics, 876 books on Science and 1608 books on other subjects. How many books are there in all in the library?

8. A number exceeds 6897 by 2478. What is that number?

9. The difference between two numbers is 1876. If the smaller number is 7948, find the larger number.

10. The cost of a music system is ₹ 6356 more than that of a bicycle. If the cost of the bicycle is ₹ 1765, what is the cost of the music system?

11. The total number of students in primary, middle and senior classes of a school are 5028, 2397 and 1845 respectively. What is the total strength of the school?

12. A poultry farm produces 1639, 2578, 1456 and 995 eggs in four consecutive days. How many eggs altogether are produced in these days?

13. Mr Gupta bought a mixer grinder set for ₹ 3485, a quilt for ₹ 2738 and a bag for ₹ 847. How much had he to pay in all?

Enrichment Time

Mental Addition

You have now learnt to add two or more numbers by writing them columnwise. But, sometimes, in our everyday life, it is not possible to write and add. At such times, one needs to add mentally.

Let us take an example.

A boy is standing at a shop. He buys a pencil box for ₹ 56 and a colour set for ₹ 23. How much money does the boy have to pay to the shopkeeper? Clearly, we need to add 56 and 23.

To add mentally, we think of

56 as 50 and 6 and 23 as 20 and 3

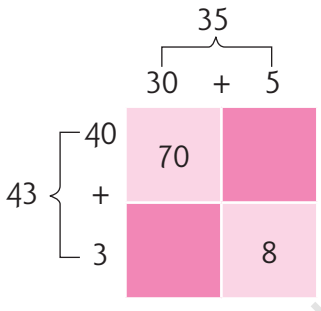
Now, 50 and 20 is 70; 6 and 3 is 9.

70 and 9 is 79.

So, the boy has to pay ₹ 79 to the shopkeeper.

We may, thus, add any two numbers mentally as shown below:

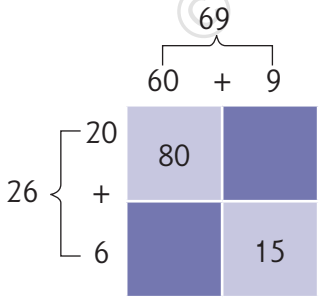
1. 35 + 43



= 70 + 8 = 78

So, 35 + 43 = 78.

2. 69 + 26



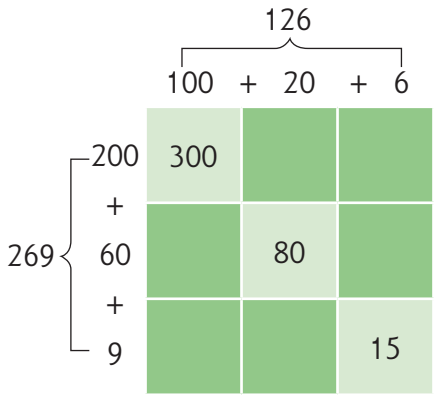
= 80 + 15 = 95

So, 69 + 26 = 95.

Now, try adding 3-digit numbers in the same manner. Here, for 3-digit numbers, we have to sort out the hundreds, tens and ones and then add them separately.

Consider the following example.

3. 126 + 269



= 300 + 80 + 15 = 395

So, 126 + 269 = 395.

Add mentally.

1. 41 + 24 **2.** 23 + 57 **3.** 52 + 46

4. 37 + 38 **5.** 69 + 18 **6.** 42 + 29

7. 138 + 44 **8.** 643 + 345 **9.** 248 + 193

10. Kirti has 27 stamps with her. Rohit gave her 36 stamps more. How many stamps does Kirti have now?

11. After distributing 58 sweets among the children, Deepak is left with 28 sweets. How many sweets did Deepak have with him at the beginning?

12. A train compartment is carrying 158 people. Another compartment is carrying 229 people. In all, how many people are there in both the compartments?

Things to Remember

1. When some numbers are added, each number is called an addend. The result obtained after addition is called their sum.

2. The sum of two numbers does not change when the order of addends is changed. This is called the order property for addition of numbers.

3. The sum of three or more numbers does not change when their grouping is changed. This is called grouping property for addition of numbers.

4. The sum of a number and 0 is equal to the number itself. This is called additive property for zero.

Assessment 3

QUESTION BAG 1

(Objective Type Questions)

Tick (✓) the correct answer.

1. 14 + 16 + 12 + 18 = ?

(a) 40 ☐ (b) 50 ☐ (c) 60 ☐ (d) 70 ☐

2. 25 + 35 + 45 + 55 = ?

(a) 130 ☐ (b) 140 ☐ (c) 150 ☐ (d) 160 ☐

3. The ones digit in the sum of 3656 and 1948 is

(a) 4 ☐ (b) 6 ☐ (c) 7 ☐ (d) 8 ☐

4. If we add 9 tens, 5 hundreds and 3 ones, then the result is

(a) 17 ☐ (b) 395 ☐ (c) 593 ☐ (d) 953 ☐

5. A school library had 2698 books. The school bought 578 more books. How many books does the library have now?

(a) 3196 ☐ (b) 3256 ☐ (c) 3266 ☐ (d) 3276 ☐

6. Tanya sold 27 chocolates and 47 pastries. Vanya sold 35 chocolates and 39 pastries. How many pastries were sold in all?

(a) 62 ☐ (b) 66 ☐ (c) 82 ☐ (d) 86 ☐

7. There are three primary schools in a city. The total strength of these schools is 1200, 1300 and 1500 respectively. How many pupils are there in all in the three schools?

(a) 3000 ☐ (b) 3500 ☐ (c) 3800 ☐ (d) 4000 ☐

8. Joe has ₹ 38, Anna has ₹ 25 more than Joe. How much money do they have together?

(a) ₹ 63 ☐ (b) ₹ 76 ☐ (c) ₹ 91 ☐ (d) ₹ 101 ☐

9. 40 + 30 + 20 = ☐ + 10

The numeral that should fill the empty box above is

(a) 60 ☐ (b) 70 ☐ (c) 80 ☐ (d) 90 ☐

10. 1345 + 55 + 100 = ☐ + 500

What should come in the empty box above?

(a) 900 ☐ (b) 1000 ☐ (c) 1050 ☐ (d) 1100 ☐

11. Every month Mr Paul spends ₹ 3650 and saves ₹ 5550. What is his monthly income?

(a) ₹ 8200 ☐ (b) ₹ 9000 ☐ (c) ₹ 9200 ☐ (d) ₹ 9400 ☐

12. In the sum of 1984, 2417 and 1689, how many thousands are there?

(a) 5 ☐ (b) 6 ☐ (c) 7 ☐ (d) 8 ☐

13. Find the missing number in the following addition:

	4	8	9
+	2	☐	7
	7	5	6

(a) 4 ☐ (b) 5 ☐ (c) 6 ☐ (d) 7 ☐

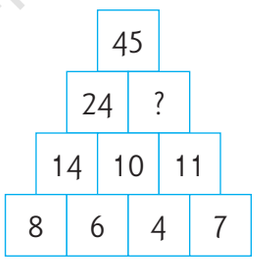
14. A town has 4456 adults and 2887 children. The population of the town is

(a) 6233 ☐ (b) 7233 ☐ (c) 7343 ☐ (d) 7443 ☐

15. Study the pattern and find the missing term.

(a) 21 ☐ (b) 22 ☐

(c) 23 ☐ (d) 24 ☐



QUESTION BAG 2

1. Fill in the empty boxes.

(a) 100 = ☐ tens + 10 ones

(b) 1000 = ☐ hundreds + 10 tens

(c) 200 = ☐ hundreds + 10 tens

(d) 400 = ☐ hundreds + 9 tens + ☐ ones

(e) 3000 = ☐ hundreds

2. Fill in the empty boxes.

(a) 3256 + 100 = ☐

(b) 4900 + 1000 = ☐

(c) 2990 + 10 = ☐

(d) 9900 + 100 = ☐

(e) 3060 + 10 = ☐

(f) 4900 + 100 = ☐

(g) 6109 + ☐ = 6119

(h) 9929 + ☐ = 9930

(i) 2232 + ☐ = 2332

(j) 6010 + ☐ = 6110

3. Fill in the blanks.

(a) Odd number + Odd number = ...

(b) Odd number + Even number = ...

(c) Even number + Even number = ...

(d) Even number + ... = Odd number

4. Without actual addition, write if the sum is even or odd.

(a) 6396 + 1048 ☐

(b) 1835 + 2096 ☐

(c) 4464 + 2089 ☐

(d) 6361 + 3187 ☐

5. State whether each of the following statements is true or false.

(a) The sum is always greater than any of the addends. .....

(b) The digit in the ones place of the sum 3265 + 2857 is 2. .....

(c) The sum of any three odd numbers is an even number. .....

6. Aman's landlord spent ₹ 2868 on repairing the pipelines and ₹ 3595 on electrical fittings in the house. What is the total expenditure of his landlord?

7. A company manufactured 3789 cars in the first year and 4369 cars in the second year. How many cars did the company manufacture in the two years taken together?

8. In a school, there are 1086 students in the primary wing, 878 students in the middle wing and 397 students in the senior wing. How many students study in the school?

5 Subtraction

In Class 2, we have learnt the subtraction of 3-digit numbers. We apply the same method for the subtraction of 4-digit numbers.

Subtraction without Borrowing

Method: For subtracting a number from another number, we take the following steps:

Step 1: Write the smaller number under the larger one in columns.

Step 2: Subtract columnwise.

Subtract ones from ones, tens from tens, hundreds from hundreds and thousands from thousands.

The following examples will make the idea more clear.

Solved Examples

Example 1: Subtract 7532 from 8795.

Solution: Clearly, 8795 > 7532.

Putting the given numbers in column form and subtracting columnwise, we get:

	Th	H	T	O
	8	7	9	5
–	7	5	3	2
	1	2	6	3

Explanation:

Subtracting ones : 5 ones – 2 ones = 3 ones
Write 3 under ones column.

Subtracting tens : 9 tens – 3 tens = 6 tens
Write 6 under tens column.

Subtracting hundreds : 7 hundreds – 5 hundreds = 2 hundreds
Write 2 under hundreds column.

Subtracting thousands : 8 thousands – 7 thousands = 1 thousand
Write 1 under thousands column.

Thus, 8795 – 7532 = 1263.

Example 2: Find the difference between 3061 and 3572.

Solution: Both the given numbers are 4-digit numbers.

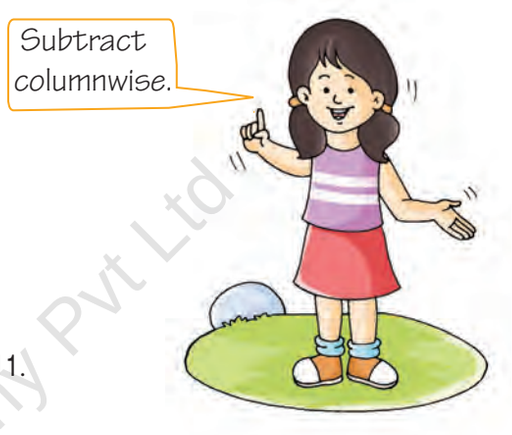
Their digits at thousands place are the same.

At hundreds place 3572 has 5 while 3061 has 0.

Clearly, 5 > 0 and therefore, 3572 > 3061.

Arranging the numbers in column form and subtracting columnwise, we get:

	Th	H	T	O
	3	5	7	2
–	3	0	6	1
		5	1	1



Hence, the difference between the given numbers is 511.

Exercise 10

Subtract:

1.

	Th	H	T	O
	6	5	4	8
–	4	1	3	5

2.

	Th	H	T	O
	7	9	8	4
–	4	7	5	1

3.

	Th	H	T	O
	9	8	7	2
–	5	3	4	0

4.

	Th	H	T	O
	5	6	3	9
–	2	3	1	5

5.

	Th	H	T	O
	3	2	6	7
–	1	0	3	2

6.

	Th	H	T	O
	4	7	0	5
–	1	5	0	3

7.

	Th	H	T	O
	2	3	5	7
–	1	0	3	2

8.

	Th	H	T	O
	8	6	4	0
–	3	2	1	0

9.

	Th	H	T	O
	3	4	6	2
–	1	2	4	0

10.

	Th	H	T	O
	3	9	0	8
–		6	0	3

11.

	Th	H	T	O
	6	4	5	0
–		2	3	0

12.

	Th	H	T	O
	1	2	3	8
–			2	3

Write in column form and find the difference.

13. 2782 – 1450

14. 5697 – 4372

15. 6305 – 3302

16. 3918 – 1605

17. Subtract 3640 from 5863.

18. Subtract 7365 from 9675.

19. Subtract 1072 from 3184.

20. Subtract 478 from 1589.

21. Find the difference between 2537 and 3648.

22. Find the difference between 3472 and 3102.

23. Find the difference between 2467 and 2013.

Subtraction with Borrowing

Example 1: Subtract 2356 from 8525.

Solution: We proceed as shown below:

Step 1: Arrange the numerals columnwise as shown alongside.

	Th	H	T	O
	8	5	2	5
–	2	3	5	6

Step 2: **Subtracting ones:**

We want to subtract 6 from 5.

But 6 > 5.

So, from the tens column, we borrow 1 ten, leaving behind 1 ten.

Now, 1 ten + 5 ones = 10 ones + 5 ones = 15 ones

∴ 15 ones – 6 ones = 9 ones.

Write 9 under ones column.

	Th	H	T	O
			(1)	(15)
	8	5	~~2~~	~~5~~
–	2	3	5	6
				9

Step 3: **Subtracting tens:**

We want to subtract 5 from 1.

But, 5 > 1.

So, from the hundreds column, we borrow 1 hundred, leaving behind 4 hundreds.

Now, 1 hundred + 1 ten = 10 tens + 1 ten = 11 tens

∴ 11 tens – 5 tens = 6 tens

Write 6 under tens column.

	Th	H	T	O
		(4)	(11)	(15)
	8	~~5~~	~~2~~ 1	~~5~~
–	2	3	5	6
			6	9

Step 4: **Subtracting hundreds:**

4 hundreds – 3 hundreds = 1 hundred

Write 1 under hundreds column.

Step 5: **Subtracting thousands:**

8 thousands – 2 thousands = 6 thousands

Write 6 under thousands column.

Thus, 8525 – 2356 = 6169.

	Th	H	T	O
		(4)	(11)	(15)
	8	~~5~~	~~2~~ 1	~~5~~
–	2	3	5	6
	6	1	6	9

Example 2: Subtract 4968 from 6753. Check your answer.

Solution: Arranging the given numbers in column form and subtracting columnwise, we get:

	Th	H	T	O
	(5)	(16)	(14)	(13) ← After borrowing
	~~6~~	~~7~~ 6	~~5~~ 4	~~3~~
–	4	9	6	8
	1	7	8	5

Explanation:

Step 1: **Subtracting ones:**

We want to subtract 8 from 3. But, 8 > 3.

So, from the tens column, we borrow 1 ten, leaving behind 4 tens.

Now, 1 ten + 3 ones = 10 ones + 3 ones = 13 ones

∴ 13 ones – 8 ones = 5 ones

Write 5 under ones column.

Step 2: **Subtracting tens:**

We want to subtract 6 from 4. But, 6 > 4.

So, from the hundreds column, we borrow 1 hundred, leaving behind 6 hundreds.

Now, 1 hundred + 4 tens = 10 tens + 4 tens = 14 tens

∴ 14 tens – 6 tens = 8 tens

Write 8 under tens column.

Step 3: **Subtracting hundreds:**

We want to subtract 9 from 6. But, 9 > 6.

So, from the thousands column, we borrow 1 thousand, leaving behind 5 thousands.

Now, 1 thousand + 6 hundreds = 10 hundreds + 6 hundreds = 16 hundreds

∴ 16 hundreds – 9 hundreds = 7 hundreds.

Write 7 under hundreds column.

Step 4: **Subtracting thousands:**

5 thousands – 4 thousands = 1 thousand

Write 1 under thousands column.

Thus, 6753 – 4968 = 1785.

How to Check Your Answer?

When the answer obtained on subtraction is added to the smaller number, then we must get the bigger number. In that case, the answer is correct.

In the above case:

	Th	H	T	O	
Smaller number =	4	9	6	8	
Answer obtained = +	1	7	8	5	
	6	7	5	3	= Bigger number

Hence, the answer obtained is correct.

Example 3: Subtract 3654 from 9600 and check the answer.

Solution: Arranging the given numbers in column form and subtracting columnwise, we get:

	Th	H	T	O	
	8	15	9	10	← After borrowing
	~~9~~	~~5~~ 6	~~10~~ 0	~~0~~	
–	3	6	5	4	
	5	9	4	6	

Explanation:

Step 1: **Subtracting ones:**

We want to subtract 4 from 0. But 4 > 0.

So, we borrow 1 ten from the tens place.

But, there is 0 at tens place.

So, we borrow 1 hundred, leaving behind 5 hundreds.

Now, 1 hundred = 10 tens.

Leaving 9 tens at tens place, we borrow 1 ten to the ones place.

1 ten = 10 ones.

Thus, we have 5 at hundreds place, 9 at tens place and 10 at ones place.

Now, 10 ones – 4 ones = 6 ones

Write 6 under ones column.

Step 2: **Subtracting tens:**

9 tens – 5 tens = 4 tens

Write 4 under tens column.

Step 3: **Subtracting hundreds:**

We want to subtract 6 from 5. But 6 > 5.

So, we borrow 1 thousand, leaving behind 8 thousands.

And, 1 thousand + 5 hundreds = 10 hundreds + 5 hundreds

= 15 hundreds

∴ 15 hundreds – 6 hundreds = 9 hundreds

Write 9 under hundreds column.

Step 4: **Subtracting thousands:**

8 thousands – 3 thousands = 5 thousands

Thus, 9600 – 3654 = 5946.

Check:

			Th	H	T	O	
Smaller number	=		3	6	5	4	
Answer obtained	=	+	5	9	4	6	
			9	6	0	0	= Bigger number

Hence, the answer obtained is correct.

Example 4: Subtract 2385 from 5000.

Solution: Arranging the given numbers in column form and subtracting columnwise, we get:

	Th	H	T	O	
	(4)	(9)	(9)	(10)	← After borrowing
	~~5~~	~~10~~ 0	~~10~~ 0	~~0~~	
–	2	3	8	5	
	2	6	1	5	

Explanation:

Step 1: **Subtracting ones:**

We cannot subtract 5 from 0. We have 0 at both tens and hundreds places. So, we borrow 1 thousand, leaving behind 4 thousands.

1 thousand = 10 hundreds

Leaving 9 hundreds at hundreds place, we borrow 1 hundred to the tens place.

1 hundred = 10 tens

Again, leaving 9 tens at tens place, we borrow 1 ten to the ones place.

1 ten = 10 ones

Thus, we have 4 at thousands place, 9 at hundreds place, 9 at tens place and 10 at ones place.

Now, 10 ones – 5 ones = 5 ones

Write 5 under ones column.

Step 2: **Subtracting tens:**

9 tens – 8 tens = 1 ten

Write 1 under tens column.

Step 3: **Subtracting hundreds:**

9 hundreds – 3 hundreds = 6 hundreds

Write 6 under hundreds column.

Step 4: **Subtracting thousands:**

4 thousands – 2 thousands = 2 thousands

Write 2 under thousands column.

Thus, 5000 – 2385 = 2615.

Exercise 11

Subtract:

1.

Th	H	T	O
4	1	3	1
– 3	7	6	5

2.

Th	H	T	O
7	7	7	7
– 1	8	8	8

3.

Th	H	T	O
5	6	4	3
– 2	7	5	6

4.

Th	H	T	O
4	0	0	0
– 1	6	8	3

5.

Th	H	T	O
6	5	8	1
– 3	4	6	9

6.

Th	H	T	O
5	3	4	0
– 1	9	8	2

7.

Th	H	T	O
5	1	1	1
– 1	3	4	5

8.

Th	H	T	O
3	7	8	5
– 2	9	8	7

9.

Th	H	T	O
7	0	0	0
– 4	0	7	6

10.

Th	H	T	O
3	6	0	0
– 2	9	7	5

11.

Th	H	T	O
6	0	0	1
– 2	9	9	9

12.

Th	H	T	O
9	6	5	0
– 5	4	6	8

13.

Th	H	T	O
7	0	1	3
– 5	1	6	8

14.

Th	H	T	O
8	2	0	5
– 4	3	1	8

15.

Th	H	T	O
3	1	2	0
–	2	8	6

16.

	Th	H	T	O
	5	1	0	3
–		4	8	5

17.

	Th	H	T	O
	5	0	0	1
–		6	7	8

18.

	Th	H	T	O
	2	0	0	0
–		2	5	8

Find the difference.

19. 3016 – 1258

20. 3243 – 1879

21. 8001 – 1678

22. 6000 – 2832

23. 4007 – 2789

24. 7110 – 5678

Find the difference between:

25. 4796 and 2998

26. 2031 and 1299

27. 8264 and 9020

28. 3953 and 8000

Find the missing numbers.

29.

	7	□	5	6
–	2	3	□	9
	□	9	8	□

30.

	□	2	□	1
–	2	□	6	4
	2	8	9	□

31.

	8	□	6	1
–	□	5	□	8
	3	7	8	□

Properties of Subtraction

1. We cannot change the order of numbers in subtraction. This is because, we always subtract a smaller number from a greater number.

2. When a number is subtracted from itself, the difference obtained is 0.

Thus, we have:

83 – 83 = 0, 549 – 549 = 0, 8456 – 8456 = 0, etc.

3. When 0 is subtracted from a number, the difference is the number itself.

Thus, we have:

67 – 0 = 67, 801 – 0 = 801, 9632 – 0 = 9632 etc.

Word Problems

The concept of subtraction helps us do important calculations in everyday life.

Solved Examples

Example 1: How much is 6103 greater than 4817?

Solution: The greater of the given numbers = 6103

The smaller of the given numbers = 4817

Difference between the given numbers = 6103 − 4817 = 1286

Hence, 6103 is greater than 4817 by 1286.

	(5)	(10)	(9)	(13)
	~~6~~	~~0~~ 1	~~10~~ 0	~~3~~
−	4	8	1	7
	1	2	8	6

Example 2: The sum of two numbers is 9031. If one of the numbers is 4872, find the other number.

Solution: The sum of the two numbers = 9031

One of the numbers = 4872

The other number = 9031 − 4872 = 4159

Hence, the other number is 4159.

	(8)	(9)	(12)	(11)
	~~9~~	~~10~~ 0	~~2~~ 3	1
−	4	8	7	2
	4	1	5	9

Example 3: What number must be added to 3817 to get 8000?

Solution: The sum of the two numbers = 8000

One of the numbers = 3817

The other number = 8000 − 3817 = 4183

Hence, 4183 must be added to 3817 to get 8000.

	(7)	(9)	(9)	(10)
	~~8~~	~~10~~ 0	~~10~~ 0	~~0~~
−	3	8	1	7
	4	1	8	3

Example 4: The population of a village is 7213. The number of males in this village is 4875. What is the number of females in the village?

Solution: Total population of the village = 7213

Number of males in the village = 4875

Number of females in the village = 7213 − 4875 = 2338

Hence, the number of females in the village is 2338.

	(6)	(11)	(10)	(13)
	~~7~~	~~1~~ 2	~~0~~ 1	~~3~~
−	4	8	7	5
	2	3	3	8

Example 5: Ahmed earns ₹ 8305 per month. His monthly expenditure is ₹ 6728 and the rest he saves. How much does he save every month?

Solution: Ahmed's total monthly income = ₹ 8305

His monthly expenditure = ₹ 6728

His monthly saving = ₹ (8305 – 6728)

= ₹ 1577

Hence, Ahmed saves ₹ 1577 per month.

	(7)	(12)	(9)	(15)
	~~8~~	~~2~~ 3	~~10~~ 0	~~5~~
–	6	7	2	8
	1	5	7	7

Example 6: The price of a radio is ₹ 2800 and that of a transistor is ₹ 2375. Which costs more and by how much?

Solution: The price of a radio = ₹ 2800

The price of a transistor = ₹ 2375

Clearly, 2800 > 2375.

∴ The radio costs more than the transistor.

Difference in their prices = ₹ (2800 – 2375)

= ₹ 425

Hence, the radio costs more than the transistor by ₹ 425.

	(7)	(9)	(10)
2	~~8~~	~~10~~ 0	~~0~~
– 2	3	7	5
	4	2	5

Exercise 12

1. How much is 7005 greater than 5849?
2. How much is 3768 less than 5012?
3. The sum of two numbers is 8324. If one of the numbers is 5896, what is the other number?
4. What number must be added to 5679 to get 9123?
5. What number must be subtracted from 6314 to get 4869?
6. The difference between two numbers is 2895. If the larger number is 8560, find the smaller one.

7. There are 3250 students in a school. If 1867 of them are boys, how many are girls?

8. 3506 persons visited the zoo on a holiday. Out of these, 1738 were adults. How many children visited the zoo that day?

9. There were 4312 bags of cement in a godown. If 3425 bags were sold out, how many bags were left in the godown?

10. There were 6205 chickens in a poultry farm. Due to some disease 1429 chickens died. How many were left?

11. A carpenter purchased 5014 nails. He used 4725 of them. How many nails were left with him?

12. Mr Raman had ₹ 9213 in his bank account. He withdrew ₹ 7435. How much money has he in the bank now?

13. Uma needs ₹ 5108 to buy a silver chain. She has ₹ 3289 with her. How much more does she need?

14. The total cost of a sewing machine and a cycle is ₹ 3720. If the sewing machine costs ₹ 1975, what is the cost of the cycle?

15. At a certain examination 8320 students appeared. Out of these 6548 could get through. How many failed?

16. Mr Mehta covered a journey of 2315 kilometres. He travelled 1986 kilometres by train and the rest by bus. What distance did he cover by bus?

Things to Remember

1. The result obtained on subtraction is called the difference.
2. We cannot change the order of numbers in subtraction.
3. When a number is subtracted from itself, the difference obtained is 0.
4. When 0 is subtracted from a number, the difference is the number itself.

Enrichment Time

Mental Subtraction

You are already acquainted with both forward and reverse skip counting in tens.

Let us review the idea.

Consider the pattern: 90, 80, 70, ..., ..., ..., ...

Clearly, the above pattern may be completed as: 90, 80, 70, 60, 50, 40, 30.

Again, consider the pattern 86, 76, 66, ..., ...,...,... .

This pattern may be completed as 86, 76, 66, 56, 46, 36, 26.

Clearly, skip counting in tens is based on adding and subtracting 10.

So, now it must be quite simple for you to subtract 10, 20, 30, ... from a given number.

Thus, we have:

78 – 10 = 68, 63 – 20 = 43, 56 – 30 = 26 and so on.

Let us use this principle to carry out subtractions orally or mentally.

Let us subtract 23 from 96.

Clearly, 23 is 20 and 3.

So, first we subtract 20 from 96 and then we subtract 3 from the difference so obtained.

Now, 96 – 20 = 76.

And, 76 – 3 = 73.

So, 96 – 23 = 73.

Again, let us subtract 38 from 54.

Now, 38 is 30 and 8;

54 – 30 = 24 and 24 – 8 = 16

So, 54 – 38 = 16.

To subtract mentally, we split the number to be subtracted into tens and ones. We subtract the number of tens first from the given number and then from the difference so obtained, we subtract the number of ones to get the answer.

Subtract mentally.

1. 95 – 21 **2.** 88 – 55 **3.** 68 – 47

4. 52 – 26 **5.** 73 – 37 **6.** 85 – 58

Assessment 4

QUESTION BAG 1

(Objective Type Questions)

Tick (✓) the correct answer.

1. 900 – 201 = ?

(a) 699 ☐ (b) 700 ☐ (c) 701 ☐ (d) 799 ☐

2. The number with more digits is

(a) always greater ☐ (b) sometimes greater ☐

(c) always smaller ☐ (d) can't say ☐

3. 14 less than 41 is

(a) 7 ☐ (b) 33 ☐ (c) 27 ☐ (d) 37 ☐

4. 9000 – 3782 = ?

(a) 5128 ☐ (b) 5218 ☐ (c) 5328 ☐ (d) 6782 ☐

5. Which number will come next in the pattern shown below?

63, 61, 57, 51, ...

(a) 41 ☐ (b) 43 ☐ (c) 45 ☐ (d) 47 ☐

6. Look at the number sentence below:

87 + ☐ = 141

Which number will make the number sentence true?

(a) 54 ☐ (b) 56 ☐ (c) 64 ☐ (d) 68 ☐

7. What is 15 – 14 + 13 – 12 + 11 – 10 + 9 – 8?

(a) 92 ☐ (b) 48 ☐ (c) 4 ☐ (d) 1 ☐

8. A stationary store sold 120 notebooks on Monday and 94 notebooks on Tuesday. How many fewer notebooks did he sell on Tuesday than he sold on Monday?

(a) 24 ☐ (b) 26 ☐ (c) 34 ☐ (d) 36 ☐

9. 800 – ☐ tens = 630

(a) 17 ☐ (b) 170 ☐ (c) 27 ☐ (d) 270 ☐

10. Which digit should come in place of ☐ so that following subtraction is correct?

	9	0	2
–	2	☐	7
	6	3	5

(a) 5 ☐ (b) 6 ☐ (c) 7 ☐ (d) 9 ☐

11. In the month of March, there were 16 working days. How many days were holidays?

(a) 12 ☐ (b) 13 ☐ (c) 14 ☐ (d) 15 ☐

12. A bakery shop has 23 pineapple pastries, 28 mango pastries and 45 chocolate pastries. If 69 pastries are sold on a certain day, how many pastries are left unsold?

(a) 4 ☐ (b) 27 ☐ (c) 36 ☐ (d) 37 ☐

QUESTION BAG 2

1. Subtract:

(a)

	6	0	2	5
–	3	9	4	8

(b)

	4	0	7	0
–	1	7	9	6

(c)

	5	0	0	2
–	1	8	3	5

2. Fill in the blank boxes.

(a) 6392 – ☐ = 6392

(b) 8475 – ☐ = 0

(c) 7420 – 0 = ☐

(d) 6780 – ☐ = 6779

(e) 4975 – 1 = ☐

(f) ☐ – 1 = 8984

3. Fill in the blank boxes.

(a) 5596 – 10 = ☐

(b) 6360 – 100 = ☐

(c) 8859 – ☐ = 8759

(d) 8890 – ☐ = 8880

(e) 9105 – 1000 = ☐

(f) 5555 – ☐ = 4555

4. Fill in the blank boxes.

(a) 150 – ☐ = 125

(b) 100 – ☐ = 20

(c) 150 – ☐ = 80

(d) 250 – ☐ = 150

(e) 19 – 6 = ☐ – 4

(f) 15 – 4 = 8 + ☐

(g) ☐ – 5 = 18 – 2

(h) 30 + ☐ = 40 – 5

(i) 50 – 10 = 20 + ☐

(j) 30 – 15 = 10 + ☐

5. Fill in the placeholders with >, < or =.

(a) 100 – 40 ◯ 120 – 60

(b) 75 – 25 ◯ 90 – 30

(c) 1000 – 300 ◯ 850 – 200

6. The sum of two numbers is 8136. One of them is 3887. What is the other number?

7. By how much is 3945 greater than 3459?

8. Out of 1215 books in a library, 347 books were lent out. How many books are still in the library?

9. Reena had 2614 marbles. She gave 1829 to her friends. How many marbles does she have now?

10. Rajan has 1167 stamps while his brother Sajal has 1843 stamps. Who has more stamps and by how many?

11. A box had some red and blue balls. If there were 7645 balls out of which 2869 were blue, how many balls were red?

6 Problems on Addition and Subtraction

Suppose a problem involving three or more numbers with a combination of addition (+) and subtraction (−) signs is given.

For solving such a problem, we proceed as per the following steps:

Step 1: Add all the numbers with + sign before them.

Step 2: Add all the numbers with − sign before them.

Step 3: Subtract the second sum from the first sum.

Note: The first number written without a + or − sign is taken up as with + sign.

Solving problems with combinations of addition and subtraction helps us solve a variety of word problems as you shall see in the examples given below:

Solved Examples

Example 1: Simplify: 3678 − 1487 + 2456 − 2798.

Solution:

Step 1: Adding the numbers with + sign before them, we get:

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

Step 2: Adding the numbers with − sign before them, we get:

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

Step 3: Subtracting the second sum from the first sum, we get:

	Th	H	T	O
	6	1	3	4
−	4	2	8	5
	1	8	4	9

Thus, 3678 − 1487 + 2456 − 2798 = 1849.

Example 2: The population of a village is 6410. If there are 1973 women and 1459 children, how many men are there in the village?

Solution: Total population of the village = 6410

Number of women in the village = 1973

Number of children in the village = 1459

Number of women and children in the village

= 1973 + 1459

= 3432

Number of men in the village = 6410 − 3432

= 2978

Hence, the number of men in the village is 2978.

	1	9	7	3
+	1	4	5	9
	3	4	3	2

	6	4	1	0
−	3	4	3	2
	2	9	7	8

Example 3: 7016 persons visited the zoo on the first three days of a week. If 2548 and 1979 persons visited the zoo on Monday and Tuesday respectively, how many persons visited the zoo on Wednesday?

Solution: Number of persons who visited the zoo on 3 days = 7016

Number of persons who visited the zoo on Monday = 2548

Number of persons who visited the zoo on Tuesday = 1979

Number of persons who visited the zoo on Monday and Tuesday = 2548 + 1979

= 4527.

Number of persons who visited the zoo on Wednesday = 7016 − 4527

= 2489.

Hence, 2489 persons visited the zoo on Wednesday.

	2	5	4	8
+	1	9	7	9
	4	5	2	7

	7	0	1	6
−	4	5	2	7
	2	4	8	9

Exercise 13

Simplify:

1. 3716 – 1829 + 697

2. 2368 – 3459 + 2987

3. 2513 – 589 + 732 – 1067

4. 6823 – 1946 + 2761 – 1250

5. 5701 + 642 – 1396 – 2381

6. 8300 + 1032 – 5431 – 2357

7. Subtract the sum of 2999 and 3888 from 9111.

8. Subtract 4235 from the sum of 3672 and 1893.

9. Subtract the difference of 3672 and 1893 from 4235.

10. Subtract the difference of 4587 and 6375 from the difference of 7354 and 3689.

11. The sum of three numbers is 9010. If two of them are 3768 and 1697, find the third number.

12. Gopal had ₹ 7520. He purchased a chair for ₹ 1765 and a table for ₹ 2978. How much money was left with him?

13. From a rope 3000 m long, two pieces measuring 876 m and 1057 m were cut off. Find the length of the remaining rope.

14. Mrs Janki needed ₹ 9000 to buy a necklace. She had ₹ 5436 with her and took a loan of ₹ 3349 from her friend Geeta. How much is she still short of?

15. An orchard has 5304 trees. There are 1647 coconut trees, 2798 mango trees and rest orange trees. How many orange trees are there in the orchard?

16. Amit had to travel 4325 km. He travelled 2678 km by train, 1354 km by bus and the rest by car. What distance did he travel by car?

17. The population of a town is 8215. If there are 3438 men and 2859 women, how many children are there in the town?

7 Multiplication

Multiplication as Repeated Addition

Suppose there are 3 groups of 2 boys each.



How many boys are there in all? Clearly, 6.

$2 + 2 + 2 = 6$.

Thus, 2 taken 3 times makes 6.

We write it as: $2 \times 3 = 6$.

We say: 2 multiplied by 3 gives 6.

$2 \times 3 = 6$ is a multiplication fact.

Now, take 4 groups of 3 gifts each.

How many gifts are there in all? Clearly, 12.

$3 + 3 + 3 + 3 = 12$.

Thus, 3 taken 4 times makes 12.

We write it as: $3 \times 4 = 12$.

We say that 3 multiplied by 4 gives 12.

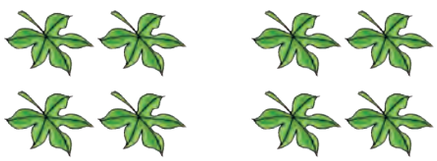
$3 \times 4 = 12$ is a multiplication fact.

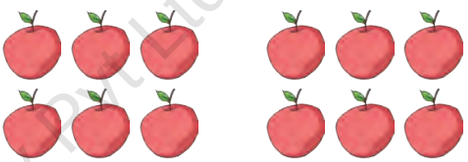
Exercise 14

Write the multiplication fact for each of the following.

1.  ◯ × ◯ = ◯

2.  ◯ × ◯ = ◯

3.  ◯ × ◯ = ◯

4.  ◯ × ◯ = ◯

5.  ◯ × ◯ = ◯

6.  ◯ × ◯ = ◯

7.  ◯ × ◯ = ◯

8.  ◯ × ◯ = ◯

9.  ◯ × ◯ = ◯

10.  ◯ × ◯ = ◯

Multiplication Tables from 2 to 10

We have already learnt the multiplication tables from 2 to 10 in Class II.
Let us review these tables again.

Multiplication Table of 2

2	×	1	=	2
2	×	2	=	4
2	×	3	=	6
2	×	4	=	8
2	×	5	=	10
2	×	6	=	12
2	×	7	=	14
2	×	8	=	16
2	×	9	=	18
2	×	10	=	20

Multiplication Table of 3

3	×	1	=	3
3	×	2	=	6
3	×	3	=	9
3	×	4	=	12
3	×	5	=	15
3	×	6	=	18
3	×	7	=	21
3	×	8	=	24
3	×	9	=	27
3	×	10	=	30

Multiplication Table of 4

4	×	1	=	4
4	×	2	=	8
4	×	3	=	12
4	×	4	=	16
4	×	5	=	20
4	×	6	=	24
4	×	7	=	28
4	×	8	=	32
4	×	9	=	36
4	×	10	=	40

Multiplication Table of 5

5	×	1	=	5
5	×	2	=	10
5	×	3	=	15
5	×	4	=	20
5	×	5	=	25
5	×	6	=	30
5	×	7	=	35
5	×	8	=	40
5	×	9	=	45
5	×	10	=	50

Multiplication Table of 6

6	×	1	=	6
6	×	2	=	12
6	×	3	=	18
6	×	4	=	24
6	×	5	=	30
6	×	6	=	36
6	×	7	=	42
6	×	8	=	48
6	×	9	=	54
6	×	10	=	60

Multiplication Table of 7

7	×	1	=	7
7	×	2	=	14
7	×	3	=	21
7	×	4	=	28
7	×	5	=	35
7	×	6	=	42
7	×	7	=	49
7	×	8	=	56
7	×	9	=	63
7	×	10	=	70

Multiplication Table of 8

8	×	1	=	8
8	×	2	=	16
8	×	3	=	24
8	×	4	=	32
8	×	5	=	40
8	×	6	=	48
8	×	7	=	56
8	×	8	=	64
8	×	9	=	72
8	×	10	=	80

Multiplication Table of 9

9	×	1	=	9
9	×	2	=	18
9	×	3	=	27
9	×	4	=	36
9	×	5	=	45
9	×	6	=	54
9	×	7	=	63
9	×	8	=	72
9	×	9	=	81
9	×	10	=	90

Multiplication Table of 10

10	×	1	=	10
10	×	2	=	20
10	×	3	=	30
10	×	4	=	40
10	×	5	=	50
10	×	6	=	60
10	×	7	=	70
10	×	8	=	80
10	×	9	=	90
10	×	10	=	100

Exercise 15

Fill in the missing numerals.

1. $2 \times 7 =$ ___ **2.** $3 \times 9 =$ ___

3. $4 \times 6 =$ ___ **4.** $3 \times 6 =$ ___

5. $6 \times 2 =$ ___ **6.** $8 \times 3 =$ ___

7. $5 \times 5 =$ ___ **8.** $7 \times 8 =$ ___

9. $6 \times 6 =$ ___ **10.** $8 \times 6 =$ ___

11. $6 \times 9 =$ ___ **12.** $9 \times 7 =$ ___

13. $5 \times 7 =$ ___ **14.** $7 \times 7 =$ ___

15. $8 \times 8 =$ ___

Complete the grid by multiplying the numbers.

×	1	2	3	4	5	6	7	8	9	10
1	1									
2				8						
3								24		
4			12							
5							35			
6					30					
7									63	
8		16								
9						54				
10										100

Multiplication of a 2-digit Number by a 1-digit Number

Example: **Multiply 23 by 2.**

Solution:

T	O
2	3
×	2
4	6

Explanation: We proceed as follows:

Step 1: Arrange the numbers in column form as shown above.

Step 2: Multiply 3 ones by 2.

3 ones × 2 = 6 ones. Write 6 under ones column.

Step 3: Multiply 2 tens by 2.

2 tens × 2 = 4 tens. Write 4 under tens column.

So, 23 × 2 = 46.

Exercise 16

Multiply:

1.

T	O
1	1
×	7

2.

T	O
2	1
×	4

3.

T	O
3	3
×	2

4.

T	O
3	2
×	3

5.

T	O
1	2
×	4

6.

T	O
3	0
×	3

7.

T	O
2	4
×	2

8.

T	O
8	7
×	1

9.

T	O
4	1
×	2

10.

T	O
2	3
×	3

11.

T	O
2	1
×	3

12.

T	O
1	4
×	2

13.

T	O
3	3
×	3

14.

T	O
1	3
×	2

15.

T	O
3	9
×	1

Multiplication with Carrying

Example 1: **Multiply 26 by 3.**

Solution:

T	O
(1)	
2	6
×	3
7	8

Explanation:

We proceed stepwise as follows:

Step 1: Write the numbers in column form.

Step 2: **Multiplying ones**: 6 ones × 3 = 18 ones

= 1 ten + 8 ones.

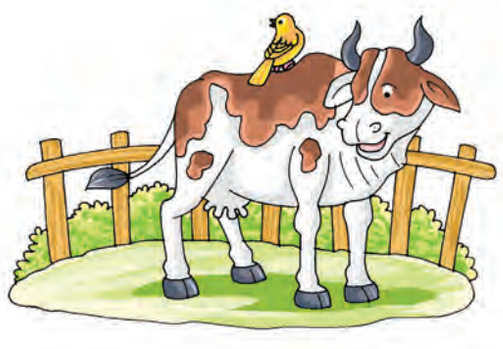
Write 8 under ones column and carry over 1 to tens column.

Step 3: **Multiplying tens:** 2 tens × 3 = 6 tens

6 tens + 1 ten (carried over) = 7 tens

Write 7 under tens column.

Thus, 26 × 3 = 78 .



Example 2: **Multiply 68 by 4.**

Solution:

H	T	O
(2)	(3)	
	6	8
	×	4
2	7	2

Explanation:

Step 1: Write the numbers in column form.

Step 2: **Multiplying ones:** 8 ones × 4 = 32 ones

= 3 tens + 2 ones.

Write 2 under ones column and carry over 3 to tens column.

Step 3: **Multiplying tens:** 6 tens × 4 = 24 tens

24 tens + 3 tens (carried over) = 27 tens = 2 hundreds + 7 tens .

Write 7 under tens column and 2 under hundreds column.

Thus, 68 × 4 = 272.

Exercise 17

Multiply:

1.

T	O
2	3
×	4

2.

T	O
4	7
×	2

3.

T	O
2	8
×	3

4.

T	O
1	9
×	4

5.

T	O
1	8
×	5

6.

T	O
1	4
×	6

7.

T	O
4	9
×	2

8.

T	O
2	7
×	2

9.

T	O
1	2
×	8

10.

T	O
1	6
×	5

11.

T	O
3	7
×	2

12.

T	O
1	3
×	7

Multiply:

13.

H	T	O
	6	5
	×	3

14.

H	T	O
	3	4
	×	6

15.

H	T	O
	4	6
	×	5

16.

H	T	O
	7	8
	×	3

17.

H	T	O
	4	8
	×	4

18.

H	T	O
	5	9
	×	3

19.

H	T	O
	3	8
	×	5

20.

H	T	O
	6	3
	×	6

21.

H	T	O
	5	4
	×	4

22.

H	T	O
	4	3
	×	5

23.

H	T	O
	6	7
	×	3

24.

H	T	O
	7	5
	×	3

25.

H	T	O
	1	8
	×	8

26.

H	T	O
	1	7
	×	9

27.

H	T	O
	4	3
	×	6

28.

H	T	O
	2	8
	×	7

29.

H	T	O
	1	3
	×	9

30.

H	T	O
	2	4
	×	8

31.

H	T	O
	8	8
	×	7

32.

H	T	O
	4	9
	×	9

33.

H	T	O
	9	8
	×	8

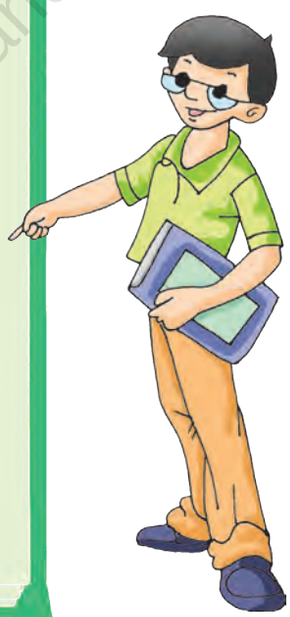
34.

H	T	O
	9	4
	×	9

Multiplication Tables from 11 to 20

Multiplication Table of 11

11	×	1	=	11
11	×	2	=	22
11	×	3	=	33
11	×	4	=	44
11	×	5	=	55
11	×	6	=	66
11	×	7	=	77
11	×	8	=	88
11	×	9	=	99
11	×	10	=	110



Multiplication Table of 12

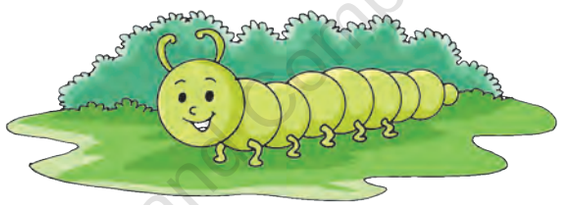
12	×	1	=	12
12	×	2	=	24
12	×	3	=	36
12	×	4	=	48
12	×	5	=	60
12	×	6	=	72
12	×	7	=	84
12	×	8	=	96
12	×	9	=	108
12	×	10	=	120

Multiplication Table of 13

13	×	1	=	13
13	×	2	=	26
13	×	3	=	39
13	×	4	=	52
13	×	5	=	65
13	×	6	=	78
13	×	7	=	91
13	×	8	=	104
13	×	9	=	117
13	×	10	=	130

Multiplication Table of 14

14	×	1	=	14
14	×	2	=	28
14	×	3	=	42
14	×	4	=	56
14	×	5	=	70
14	×	6	=	84
14	×	7	=	98
14	×	8	=	112
14	×	9	=	126
14	×	10	=	140



Multiplication Table of 15

15	×	1	=	15
15	×	2	=	30
15	×	3	=	45
15	×	4	=	60
15	×	5	=	75
15	×	6	=	90
15	×	7	=	105
15	×	8	=	120
15	×	9	=	135
15	×	10	=	150

Multiplication Table of 16

16	×	1	=	16
16	×	2	=	32
16	×	3	=	48
16	×	4	=	64
16	×	5	=	80
16	×	6	=	96
16	×	7	=	112
16	×	8	=	128
16	×	9	=	144
16	×	10	=	160

Multiplication Table of 17

17	×	1	=	17
17	×	2	=	34
17	×	3	=	51
17	×	4	=	68
17	×	5	=	85
17	×	6	=	102
17	×	7	=	119
17	×	8	=	136
17	×	9	=	153
17	×	10	=	170

Multiplication Table of 18

18	×	1	=	18
18	×	2	=	36
18	×	3	=	54
18	×	4	=	72
18	×	5	=	90
18	×	6	=	108
18	×	7	=	126
18	×	8	=	144
18	×	9	=	162
18	×	10	=	180

Multiplication Table of 19

19	×	1	=	19
19	×	2	=	38
19	×	3	=	57
19	×	4	=	76
19	×	5	=	95
19	×	6	=	114
19	×	7	=	133
19	×	8	=	152
19	×	9	=	171
19	×	10	=	190

Multiplication Table of 20

20	×	1	=	20
20	×	2	=	40
20	×	3	=	60
20	×	4	=	80
20	×	5	=	100
20	×	6	=	120
20	×	7	=	140
20	×	8	=	160
20	×	9	=	180
20	×	10	=	200

Exercise 18

Fill in the blanks.

1. 12 × 5 = ...
2. 13 × 8 = ...
3. 12 × 7 = ...
4. 14 × 6 = ...
5. 12 × 9 = ...
6. 11 × 8 = ...
7. 13 × 7 = ...
8. 14 × 7 = ...
9. 15 × 8 = ...
10. 16 × 4 = ...
11. 15 × 9 = ...
12. 14 × 9 = ...
13. 16 × 7 = ...
14. 18 × 4 = ...
15. 19 × 5 = ...
16. 17 × 6 = ...
17. 19 × 7 = ...
18. 16 × 9 = ...
19. 19 × 8 = ...
20. 18 × 8 = ...
21. 20 × 7 = ...

22. Look at the patterns and complete them.

(a) 5, 10, 15, ..., ..., ..., ...
(b) 10, 20, 30, ..., ..., ..., ...
(c) 3, 6, 9, ..., ..., ..., ...
(d) 7, 14, 21, ..., ..., ..., ...
(e) 9, 18, 27, ..., ..., ..., ...
(f) 15, 30, 45, ..., ..., ..., ...
(g) 20, 40, 60, ..., ..., ..., ...
(h) 11, 22, 33, ..., ..., ..., ...
(i) 12, 24, 36, ..., ..., ..., ...
(j) 17, 34, 51, ..., ..., ..., ...

Complete the grid by multiplying the numbers in the uppermost row with the numbers in the leftmost column.

×	11	12	13	14	15	16	17	18	19	20
1	11									
2					30					
3		36								
4				56						
5								90		
6			78							
7							119			
8										160
9									171	
10						160				

Multiplication of 3-digit Numbers

In a multiplication sum,

- the number to be multiplied is called the multiplicand;
- the number by which, we multiply is called the multiplier; and
- the result of multiplication is called the product.

  Thus, in $6 \times 5 = 30$, we have: Multiplicand = 6, Multiplier = 5 and Product = 30.

Multiplication by a 1-digit Number (Without Carrying)

Example 1: **Multiply 312 by 3.**

Solution:

H	T	O
3	1	2
	×	3
9	3	6

Explanation: We proceed as follows:

Step 1: Multiply 2 ones by 3.

2 ones × 3 = 6 ones. Write 6 under ones column.

Step 2: Multiply 1 ten by 3.

1 ten × 3 = 3 tens. Write 3 under tens column.

Step 3: Multiply 3 hundreds by 3.

3 hundreds × 3 = 9 hundreds. Write 9 under hundreds column.

Thus, $312 \times 3 = 936$.

Multiplication by a 1-digit Number (With Carrying)

Example 2: **Multiply 486 by 7.**

Solution:

Th	H	T	O
(3)	(6)	(4)	
	4	8	6
		×	7
3	4	0	2

Explanation: We proceed as follows:

Step 1: Multiply 6 ones by 7.

6 ones × 7 = 42 ones

= 4 tens + 2 ones

Write 2 under ones column. Carry over 4 tens.

Step 2: Multiply 8 tens by 7.

8 tens × 7 = 56 tens

Now, 56 tens + 4 tens (carried over) = 60 tens

= 6 hundreds + 0 tens.

Write 0 under tens column. Carry over 6 hundreds.

Step 3: Multiply 4 hundreds by 7.

4 hundreds × 7 = 28 hundreds

Now, 28 hundreds + 6 hundreds (carried over)

= 34 hundreds

= 3 thousands + 4 hundreds.

Write 4 under hundreds column and 3 under thousands column.

Thus, 486 × 7 = 3402.

Exercise 19

Multiply:

1.

H	T	O
2	0	7
	×	4

2.

H	T	O
1	3	2
	×	3

3.

H	T	O
4	1	3
	×	2

4.

H	T	O
2	1	0
	×	4

5.

H	T	O
1	3	5
	×	7

6.

H	T	O
1	6	9
	×	4

7.

H	T	O
2	6	8
	×	4

8.

H	T	O
1	8	6
	×	5

9.

H	T	O
1	3	8
	×	6

10.

H	T	O
1	9	4
	×	5

11.

H	T	O
2	8	8
	×	3

12.

H	T	O
3	1	6
	×	3

13.

H	T	O
4	5	6
	×	8

14.

H	T	O
6	0	8
	×	5

15.

H	T	O
6	9	5
	×	8

16.

H	T	O
7	8	2
	×	5

17.

H	T	O
5	9	8
	×	9

18.

H	T	O
7	9	3
	×	7

19.

H	T	O
8	6	7
	×	6

20.

H	T	O
9	8	6
	×	7

21.

H	T	O
9	2	7
	×	9

Multiplication by 10, 100, 1000

Example 1: **Multiply 756 by 10. Record your observation.**

Solution: $756 \times 10 = 756 \times 1$ ten

$= (756 \times 1)$ tens $= 756$ tens $= 7560$.

$\therefore 756 \times 10 = 7560$

Observation: We get the product 756×10 by putting one zero to the right of 756.

Thus, we have: $423 \times 10 = 4230$, $692 \times 10 = 6920$, $918 \times 10 = 9180$, etc.

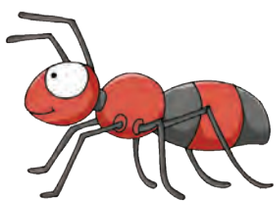
Example 2: **Multiply 69 by 100. Record your observation.**

Solution: $69 \times 100 = 69 \times 1$ hundred

$= (69 \times 1)$ hundreds

$= 69$ hundreds $= 6900$

$\therefore 69 \times 100 = 6900$.



Observation: We get the product 69×100 by putting two zeros to the right of 69.

Thus, we have: $4 \times 100 = 400$, $17 \times 100 = 1700$, $45 \times 100 = 4500$ etc.

Example 3: **Multiply 8 by 1000. Record your observation.**

Solution: $8 \times 1000 = 8 \times 1$ thousand

$= (8 \times 1)$ thousands

$= 8$ thousands $= 8000$

$\therefore 8 \times 1000 = 8000$.

Observation: We get the product 8×1000 by putting three zeros to the right of 8.

Thus, we have: $3 \times 1000 = 3000$, $5 \times 1000 = 5000$ etc.

Now, carefully read the above observations. What do you conclude?

Conclusion: To multiply a given number by 10 or 100 or 1000, we put one or two or three zeros respectively to the right of the multiplicand and we get the product.

Multiplication by 20, 30, 40, ..., 90

Example 4: **Find the products.**

(a) 16×20 (b) 15×30 (c) 27×50

Solution: We have:

(a) $16 \times 20 = 16 \times 2$ tens

$= (16 \times 2)$ tens

$= 32$ tens $= 320$.

$\therefore 16 \times 20 = 320$.

(b) $15 \times 30 = 15 \times 3$ tens

$= (15 \times 3)$ tens

$= 45$ tens $= 450$.

$\therefore 15 \times 30 = 450$.

(c) $27 \times 50 = 27 \times 5$ tens

$= (27 \times 5)$ tens

$= 135$ tens $= 1350$.

$\therefore 27 \times 50 = 1350$.

Conclusion: To multiply a given number by 20, 30, 40, ..., 90, we multiply the given number by 2, 3, 4, ..., 9 respectively and put a zero to the right of the product.

Multiplication by 200, 300, 400, ..., 900

Example 5: **Find the products.**

(a) 37 × 200 (b) 29 × 300 (c) 18 × 400 (d) 17 × 500

Solution: We have:

(a) 37 × 200 = 37 × 2 hundreds
= (37 × 2) hundreds
= 74 hundreds = 7400.
∴ 37 × 200 = 7400.

(b) 29 × 300 = 29 × 3 hundreds
= (29 × 3) hundreds
= 87 hundreds = 8700.
∴ 29 × 300 = 8700.

(c) 18 × 400 = 18 × 4 hundreds
= (18 × 4) hundreds
= 72 hundreds =7200.
∴ 18 × 400 = 7200.

(d) 17 × 500 = 17 × 5 hundreds
= (17 × 5) hundreds
= 85 hundreds = 8500.
∴ 17 × 500 = 8500.

Conclusion: To multiply a given number by 200, 300, 400, ..., 900, we multiply the given number by 2, 3, 4, ... 9 respectively and put two zeros to the right of the product.

Exercise 20

Find the product.

1. 75 × 10	**2.** 387 × 10	**3.** 689 × 10	**4.** 100 × 10
5. 23 × 100	**6.** 38 × 100	**7.** 72 × 100	**8.** 84 × 100
9. 60 × 100	**10.** 4 × 1000	**11.** 7 × 1000	**12.** 6 × 1000
13. 57 × 20	**14.** 145 × 20	**15.** 67 × 30	**16.** 74 × 40
17. 40 × 50	**18.** 53 × 50	**19.** 61 × 60	**20.** 19 × 70
21. 60 × 90	**22.** 47 × 90	**23.** 75 × 80	**24.** 38 × 200
25. 16 × 400	**26.** 17 × 400	**27.** 27 × 300	**28.** 14 × 600
29. 12 × 800	**30.** 11 × 900		

Properties of Multiplication

I. Order Property:

We may multiply two numbers in either order, the product remains the same.

This is known as order property of multiplication of numbers.

For example:

$3 \times 4 = 12$ and $4 \times 3 = 12$. Therefore, $3 \times 4 = 4 \times 3$.

$6 \times 8 = 48$ and $8 \times 6 = 48$. Therefore, $6 \times 8 = 8 \times 6$.

II. Grouping Property:

The product of three numbers remains the same even, when the grouping of the numbers is changed.

For example:

$(7 \times 4) \times 3 = 28 \times 3 = 84$ and $7 \times (4 \times 3) = 7 \times 12 = 84$.

$\therefore (7 \times 4) \times 3 = 7 \times (4 \times 3)$.

Similarly, $(8 \times 5) \times 14 = 40 \times 14 = 560$ and $8 \times (5 \times 14) = 8 \times 70 = 560$.

$\therefore (8 \times 5) \times 14 = 8 \times (5 \times 14)$.

III. Multiplicative Property of 1:

The product of any number and 1 is the number itself.

Clearly, $8 \times 1 = 8$ and $15 \times 1 = 15$.

Example: **Find the products.**

(a) 259×1 (b) 376×1

Solution:

(a)

H	T	O
2	5	9
	×	1
2	5	9

(b)

H	T	O
3	7	6
	×	1
3	7	6

Thus, $259 \times 1 = 259$ and $376 \times 1 = 376$.

IV. Multiplicative Property of Zero:

The product of any number and 0 is zero.

Clearly, $7 \times 0 = 0$, $19 \times 0 = 0$, $135 \times 0 = 0$, etc.

V. Distributive Property of Multiplication Over Addition:

Consider: $2 \times (3 + 4)$ and $(2 \times 3) + (2 \times 4)$.

We have: $2 \times (3 + 4) = 2 \times 7 = 14$.

And, $(2 \times 3) + (2 \times 4) = 6 + 8 = 14$.

Thus, $2 \times (3 + 4) = (2 \times 3) + (2 \times 4)$.

Similarly, you may verify the following:

(a) $5 \times (10 + 3) = (5 \times 10) + (5 \times 3)$.

(b) $4 \times (20 + 5) = (4 \times 20) + (4 \times 5)$.

(c) $7 \times (50 + 8) = (7 \times 50) + (7 \times 8)$.

Exercise 21

Without actual multiplication fill in the following blanks.

1. $18 \times$ ..... $= 23 \times 18$

2. ..... $\times 35 = 35 \times 19$

3. $67 \times 29 = 29 \times$ .....

4. $39 \times 84 =$ ..... $\times 39$

5. $75 \times$ ..... $= 36 \times 75$

6. ..... $\times 96 = 96 \times 27$

7. $183 \times$ ..... $= 183$

8. ..... $\times 271 = 271$

9. $870 \times 1 =$ .....

10. $1 \times 986 =$ .....

11. $192 \times 0 =$ .....

12. $0 \times 263 =$ .....

13. $(5 \times 8) \times 9 = 5 \times ($ ..... $\times 9)$

14. $7 \times (6 \times 3) = (7 \times$ ..... $) \times 3$

15. $9 \times (8 \times 10) = (9 \times$ ..... $) \times 10$

16. $3 \times (5 \times 7) = (3 \times 5) \times$ .....

17. $4 \times (5 + 7) = (4 \times 5) + (4 \times$ ..... $)$

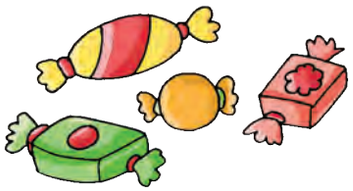
18. $5 \times (10 + 6) = (5 \times 10) + (5 \times$ ..... $)$

19. $5 \times (20 + 3) = (5 \times$ ..... $) + (5 \times 3)$

20. $6 \times (30 + 9) = (6 \times$ .....$) + (6 \times$ .....$)$

Simple Word Problems

Example 1: **4 sweets were given to each boy in a group of 8 boys. How many sweets were distributed in all?**



Solution: Number of sweets given to 1 boy = 4

Number of sweets given to 8 boys = $(4 \times 8) = 32$

Hence, 32 sweets were distributed in all.

Example 2: **The cost of one chocolate is ₹ 8. Find the cost of 10 such chocolates.**

Solution: Cost of 1 chocolate = ₹ 8

Cost of 10 chocolates = ₹ (8×10) = ₹ 80

Hence, the cost of 10 chocolates is ₹ 80.

Example 3: **A box can hold 7 pens. How many pens can 4 boxes hold?**

Solution: Number of pens 1 box can hold = 7

Number of pens 4 boxes can hold = $(7 \times 4) = 28$

Hence, 4 boxes can hold 28 pens.

Example 4: **A car travels a distance of 60 kilometres in 1 hour. How many kilometres will it cover in 7 hours?**

Solution: Distance covered by the car in 1 hour = 60 km

Distance covered by the car in 7 hours = (60×7) km

= 420 km

Hence, the distance covered by the car in 7 hours is 420 km.

Example 5: **In a grove, there are 24 trees in each row. If there are 80 rows of trees in all, how many trees are there in the grove?**

Solution: Number of trees in 1 row = 24

Number of trees in 80 rows = 24×80

= 24×8 tens

= (24×8) tens

= 192 tens = 1920

Hence, the total number of trees in the grove is 1920.

Exercise 22

Solve the following word problems.

1. The cost of a ball pen is ₹ 5. What is the cost of 8 such ball pens?
2. There are 7 days in a week. How many days are there in 9 weeks?
3. There were 6 dozen bananas in a basket. How many bananas were there in all?

4. The cost of a cap is ₹ 50. What is the cost of 6 such caps?
5. The cost of a hairband is ₹ 9. What is the cost of 60 such hairbands?

6. One basket of mangoes weighs 36 kg. What will be the total weight of 10 such baskets of mangoes?
7. There are 18 sections in a school. Each section has 50 students. How many students are there in the school?
8. There are 24 hours in a day. How many hours are there in 30 days?

9. A packet contains 32 candles. How many candles are there in 40 such packets?

10. 65 people can travel in a bus. How many people can travel in 6 such buses?
11. A basket contains 135 apples. How many apples are there in 20 such baskets?

12. A cart can carry 168 bags of cement. How many bags can 10 such carts carry?
13. A book contains 80 pages. If each page contains 37 lines, how many lines are there in the whole book?

14. An aeroplane can fly 300 kilometres in 1 hour. How many kilometres can it fly in 24 hours?
15. There are 500 sheets of paper in a pack. How many sheets are there in 14 such packs?
16. There are 60 minutes in an hour. How many minutes are there in 12 hours?

Multiplication by a 2-digit Number

We use the distributive property of multiplication to solve this type of problems. The following examples will make it clear.

Example 1: **Multiply 78 by 45.**

Solution: $78 \times 45 = 78 \times (40 + 5)$

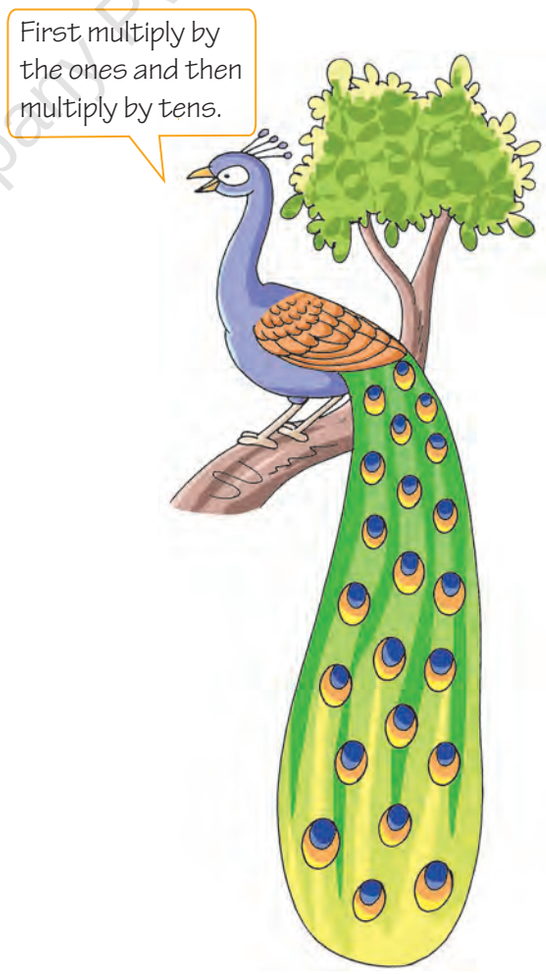
$= (78 \times 40) + (78 \times 5)$

$= 3120 + 390$

$= 3510.$

In a short method, we can do it as under.

Th	H	T	O	
		7	8	
	×	4	5	
	3	9	0	← (78 × 5)
3	1	2	0	← (78 × 40)
3	5	1	0	← (78 × 45)



Hence, $78 \times 45 = 3510$.

Example 2: **Multiply 284 by 29.**

Solution: We may write, $29 = 20 + 9$.

Th	H	T	O	
	2	8	4	
	×	2	9	
2	5	5	6	← (284 × 9)
5	6	8	0	← (284 × 20)
8	2	3	6	← (284 × 29)

Hence, $284 \times 29 = 8236$.

Exercise 23

Multiply:

1.
$$\begin{array}{r} 27 \\ \times\ 18 \\ \hline \\ \hline \end{array}$$

2.
$$\begin{array}{r} 58 \\ \times\ 26 \\ \hline \\ \hline \end{array}$$

3.
$$\begin{array}{r} 69 \\ \times\ 32 \\ \hline \\ \hline \end{array}$$

4.
$$\begin{array}{r} 74 \\ \times\ 39 \\ \hline \\ \hline \end{array}$$

5.
$$\begin{array}{r} 82 \\ \times\ 46 \\ \hline \\ \hline \end{array}$$

6.
$$\begin{array}{r} 95 \\ \times\ 53 \\ \hline \\ \hline \end{array}$$

7.
$$\begin{array}{r} 78 \\ \times\ 68 \\ \hline \\ \hline \end{array}$$

8.
$$\begin{array}{r} 56 \\ \times\ 77 \\ \hline \\ \hline \end{array}$$

9.
$$\begin{array}{r} 99 \\ \times\ 88 \\ \hline \\ \hline \end{array}$$

10.
$$\begin{array}{r} 87 \\ \times\ 93 \\ \hline \\ \hline \end{array}$$

11.
$$\begin{array}{r} 105 \\ \times\ 57 \\ \hline \\ \hline \end{array}$$

12.
$$\begin{array}{r} 134 \\ \times\ 65 \\ \hline \\ \hline \end{array}$$

13.
$$\begin{array}{r} 217 \\ \times\ 46 \\ \hline \\ \hline \end{array}$$

14.
$$\begin{array}{r} 308 \\ \times\ 28 \\ \hline \\ \hline \end{array}$$

15.
$$\begin{array}{r} 283 \\ \times\ 25 \\ \hline \\ \hline \end{array}$$

16.
$$\begin{array}{r} 169 \\ \times\ 42 \\ \hline \\ \hline \end{array}$$

17.
$$\begin{array}{r} 209 \\ \times\ 34 \\ \hline \\ \hline \end{array}$$

18.
$$\begin{array}{r} 250 \\ \times\ 18 \\ \hline \\ \hline \end{array}$$

19.
$$\begin{array}{r} 364 \\ \times\ 19 \\ \hline \\ \hline \end{array}$$

20.
$$\begin{array}{r} 473 \\ \times\ 18 \\ \hline \\ \hline \end{array}$$

21.
$$\begin{array}{r} 247 \\ \times\ 34 \\ \hline \\ \hline \end{array}$$

22.
$$\begin{array}{r} 407 \\ \times\ 16 \\ \hline \\ \hline \end{array}$$

23.
$$\begin{array}{r} 304 \\ \times\ 23 \\ \hline \\ \hline \end{array}$$

24.
$$\begin{array}{r} 503 \\ \times\ 19 \\ \hline \\ \hline \end{array}$$

25.
$$\begin{array}{r} 385 \\ \times\ 24 \\ \hline \\ \hline \end{array}$$

26.
$$\begin{array}{r} 199 \\ \times\ 47 \\ \hline \\ \hline \end{array}$$

27.
$$\begin{array}{r} 289 \\ \times\ 28 \\ \hline \\ \hline \end{array}$$

28.
$$\begin{array}{r} 179 \\ \times\ 29 \\ \hline \\ \hline \end{array}$$

Word Problems

Example 1: **A bus runs at a speed of 65 km per hour. How far will it go in 38 hours?**

Solution:

Distance covered by the bus in 1 hour = 65 km

Distance covered by the bus in 38 hours = (65 × 38) km

= 2470 km

Hence, the bus will go 2470 km in 38 hours.

Th	H	T	O
		6	5
	×	3	8
	5	2	0
1	9	5	0
2	4	7	0

Example 2: **The cost of a racket is ₹196. What is the cost of 27 such rackets?**

Solution:

Cost of 1 racket = ₹ 196

Cost of 27 rackets = ₹ (196 × 27)

= ₹ 5292

Hence, the cost of 27 rackets is ₹ 5292.

Th	H	T	O
	1	9	6
	×	2	7
1	3	7	2
3	9	2	0
5	2	9	2

Example 3: **A book contains 256 pages. Each page has 35 lines. How many lines are there in all in the book?**

Solution:

Number of lines in 1 page = 35

Number of lines in 256 pages = (256 × 35)

= 8960

So, there are 8960 lines in all in the book.

Th	H	T	O
	2	5	6
	×	3	5
1	2	8	0
7	6	8	0
8	9	6	0

Example 4: **A bag of rice weighs 23 kg. What is the total weight of 364 bags of rice?**

Solution:

Weight of 1 bag of rice = 23 kg

Weight of 364 bags of rice = (364 × 23) kg

= 8372 kg

Hence, the total weight of 364 bags is 8372 kg.

Th	H	T	O
	3	6	4
	×	2	3
1	0	9	2
7	2	8	0
8	3	7	2

Exercise 24

1. Shruti can type 75 words a minute. How many words can she type in 48 minutes?

2. A box contains 48 chalk sticks. How many chalk sticks are there in 73 such boxes?

3. There are 24 slices of bread in one loaf. How many slices are there in 65 loaves?

4. A carton contains 165 books. How many books will 54 such cartons contain?

5. The cost of a chair is ₹ 375. What is the cost of 18 such chairs?

6. One basket of tomatoes contains 268 tomatoes. How many tomatoes do 36 such baskets contain?

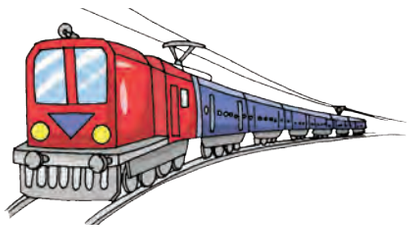
7. A packet contains 148 buttons. How many buttons are there in 64 such packets?

8. The price of an electric heater is ₹ 685. How much would it cost to buy one dozen such heaters?

9. A truck can carry 352 gunny bags. How many gunny bags can be carried by 28 trucks?

10. In a cinema hall, there are 145 rows of chairs. In each row, there are 68 chairs. How many chairs are there in the cinema hall?

11. In a grove, there are 48 rows of coconut trees. In each row, there are 189 trees. How many coconut trees are there in the grove?



12. There are 23 coaches in a train. Each coach contains 125 seats. How many people can have seats on the train?

13. 42 boys in a class planned a picnic. If each boy contributed ₹ 168, how much money was collected?

14. Raju delivers 157 newspapers each morning. How many newspapers does he deliver in 31 days?

15. A small scale industry produces 346 screws in an hour. How many screws will it produce in 23 hours?

Activity Time

Make 10 identical cards, one of each of the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. The teacher asks each child to pick up 3 cards at random. With the 3 digits so chosen, the student must be asked to form:

1. A multiplication sum between a 3-digit number and a 1-digit number to yield the greatest product.

Example: If the chosen digits are 1, 2 and 4, the required multiplication sum is

Th	H	T	O
	4	4	4
		×	4
1	7	7	6

2. A multiplication sum between a 3-digit number (of different digits) and a 1-digit number to yield the greatest product.

Example: If the chosen digits are 1, 2 and 4, the required multiplication sum is

Th	H	T	O
	4	2	1
		×	4
1	6	8	4

3. A multiplication sum between a 3-digit number and a 1-digit number to yield the smallest product.

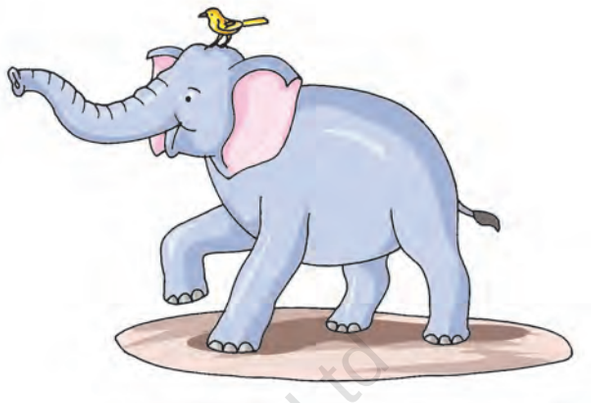
Example: If the chosen digits are 1, 2 and 4, the required multiplication sum is

Th	H	T	O
	1	1	1
		×	1
	1	1	1

4. A multiplication sum between a 3-digit number (of different digits) and a 1-digit to yield the smallest product.

Example: If the chosen digits are 1, 2 and 4, the required multiplication sum is

Th	H	T	O
	1	2	4
		×	1
	1	2	4



Remember that for the greatest product, both the multiplicand and the multiplier must be the greatest and for the smallest product, both should be the smallest.

Things to Remember

1. In a multiplication sum,

(a) the number to be multiplied is called the multiplicand;

(b) the number by which, we multiply is called the multiplier;

(c) the result obtained on multiplication is called the product.

2. To multiply a given number by 10 or 100 or 1000, we put one or two or three zeros respectively to the right of the multiplicand to get the product.

3. To multiply a given number by 20, 30, 40, ..., 90, we multiply the given number by 2, 3, 4, ..., 9 respectively and put one zero to the right of the product.

4. To multiply a given number by 200, 300, 400, ..., 900, we multiply the given number by 2, 3, 4, ..., 9 respectively and put two zeros to the right of the product.

5. The product of two numbers remains the same even when their order is changed. This is known as order property of multiplication of numbers.

6. The product of three numbers remains the same even when the grouping of the numbers is changed. This is known as grouping property of multiplication of numbers.

7. The product of any number and 1 is the number itself.

8. The product of any number and zero is zero.

9. Distributive Property of Multiplication over Addition:

$2 \times (3 + 4) = (2 \times 3) + (2 \times 4)$

Assessment 5

QUESTION BAG 1

(Objective Type Questions)

Tick (✓) the correct answer.

1. In $8 \times 5 = 40$, 40 is called the

(a) multiplicand ☐ (b) multiplier ☐

(c) sum ☐ (d) product ☐

2. $10 \times 100 = ?$

(a) 10 ☐ (b) 100 ☐ (c) 1000 ☐ (d) 10000 ☐

3. If $7 \times 11 \times 13 = 1001$, then what is $11 \times 7 \times 13$?

(a) 77 ☐ (b) 91 ☐ (c) 143 ☐ (d) 1001 ☐

4. Which of the following is equal to 106×40?

(a) $(100 \times 4) + (6 \times 4)$ ☐ (b) $(100 \times 4) + (6 \times 40)$ ☐

(c) $(100 + 40) \times (6 + 40)$ ☐ (d) $(100 \times 40) + (6 \times 40)$ ☐

5. There are 48 beads in a necklace. How many beads are there in 8 necklaces?

(a) 48×8 ☐ (b) $48 + 8$ ☐ (c) $48 + 8 \times 6$ ☐ (d) $40 \times 8 + 48$ ☐

6. The product of the greatest 3-digit number and the greatest 1-digit number is

(a) 999 ☐ (b) 1997 ☐ (c) 8991 ☐ (d) 9990 ☐

7. Tina bought the following box of pencils. If each pencil costs ₹ 3, how much did all the pencils cost?

(a) ₹ 16 ☐ (b) ₹ 18 ☐ (c) ₹ 24 ☐ (d) ₹ 30 ☐

8. Which word problem below could be represented by the multiplication fact $8 \times 3 = 24$?

(a) Sachin had 8 books. He bought 3 more books. How many books did he have in all? ☐

(b) Sachin bought 8 packets of 3 books each. How many books did he buy? ☐

(c) Sachin had 8 books. He gave away 3 of them. How many books is he left with? ☐

(d) Sachin had 8 books. He put the books in 3 stacks. How many books were there in each stack? ☐

9. The product of 50 and 50 is

(a) 25 ☐ (b) 250 ☐ (c) 500 ☐ (d) 2500 ☐

10. The product of 122 and 5 is

(a) 710 ☐ (b) 720 ☐ (c) 610 ☐ (d) 620 ☐

11. The ones digit of the product 82 and 54 is

(a) 2 ☐ (b) 4 ☐ (c) 6 ☐ (d) 8 ☐

12. The product of 16 and 238 is equal to

(a) 3808 ☐ (b) 3818 ☐ (c) 2808 ☐ (d) 2818 ☐

13. Which of the following multiplication facts is not correct?

(a) $63 \times (27 \times 18) = (18 \times 63) \times 27$ ☐ (b) $96 \times 14 = 96 \times 10 \times 4$ ☐

(c) $87 \times 98 = (80 \times 98) + (7 \times 98)$ ☐ (d) $65 \times 20 \times 5 = 65 \times 100$ ☐

14. Kewal's mother bought 8 cases of mineral water for a party. There were 24 bottles in each case. How many bottles did she buy altogether?

(a) 132 ☐ (b) 172 ☐ (c) 184 ☐ (d) 192 ☐

15. In the multiplication example shown on the right, the value of A is

(a) 2 ☐ (b) 3 ☐

(c) 4 ☐ (d) 6 ☐

H	T	O
	A	7
	×	4
1	8	8

16. Anna has 9 pizzas that are cut into 6 slices each. She herself ate 2 slices while her 12 friends ate 3 slices each. How many slices are left?

(a) 16 ☐ (b) 18 ☐ (c) 24 ☐ (d) 27 ☐

17. A man bought 3 burgers and 2 sandwiches. Each burger costs ₹ 24 and each sandwich costs ₹ 18. How much money does he have to pay altogether?

(a) ₹ 102 ☐ (b) ₹ 108 ☐ (c) ₹ 112 ☐ (d) ₹ 120 ☐

18. The product of the greatest 2-digit number ending with 1 and the smallest 2-digit number ending with 1 is

(a) 900 ☐ (b) 910 ☐ (c) 999 ☐ (d) 1001 ☐

QUESTION BAG 2

1. Fill in the missing numerals.

(a) $9 \times 7 =$ ☐

(b) $11 \times 6 =$ ☐

(c) $12 \times 8 =$ ☐

(d) $8 \times 8 =$ ☐

(e) $13 \times 9 =$ ☐

(f) $14 \times 5 =$ ☐

(g) $18 \times 8 =$ ☐

(h) $6 \times 9 =$ ☐

(i) $19 \times 4 =$ ☐

(j) $15 \times 7 =$ ☐

(k) $17 \times 6 =$ ☐

(l) $16 \times 8 =$ ☐

(m) $18 \times 9 =$ ☐

2. Fill in the missing numerals.

(a) $9 \times$ ☐ $= 72$

(b) ☐ $\times 8 = 56$

(c) $7 \times$ ☐ $= 49$

(d) $12 \times$ ☐ $= 84$

(e) ☐ $\times 8 = 112$

(f) $19 \times$ ☐ $= 114$

(g) ☐ $\times 7 = 91$

(h) ☐ $\times 8 = 120$

3. Put >, < or = in the boxes.

(a) 9×8 ☐ 12×6

(b) 7×7 ☐ 6×8

(c) 8×8 ☐ 7×9

(d) 6×9 ☐ 13×4

(e) 20×5 ☐ 10×10

(f) 19×6 ☐ 18×8

(g) 12×3 ☐ 6×6

(h) 9×50 ☐ 15×30

(i) 18×5 ☐ 15×8

(j) 16×6 ☐ 12×8

4. Solve:

(a) 80×6 (b) 7×40 (c) 50×7 (d) 3×60

(e) 9×30 (f) 20×8 (g) 70×6 (h) 5×90

5. Fill in the blank boxes.

(a) $923 \times 1 =$ ☐ (b) $84 \times 132 \times 0 =$ ☐

(c) $876 \times 10 =$ ☐ (d) $239 \times$ ☐ $= 2390$

(e) $177 \times 10 =$ ☐ (f) $81 \times 100 =$ ☐

(g) $1 \times 8796 =$ ☐ (h) $63 \times$ ☐ $= 6300$

(i) $10 \times 613 =$ ☐ (j) ☐ $\times 100 = 7600$

(k) $90 \times$ ☐ $= 9000$ (l) $999 \times$ ☐ $= 0$

(m) $25 \times 3 = 75 \times$ ☐

6. Fill in the blank boxes.

(a) $64 \times 84 = 84 \times$ ☐ (b) $97 \times 41 = 41 \times$ ☐

(c) $83 \times 24 =$ ☐ $\times 83$ (d) $719 \times 86 =$ ☐ $\times 719$

(e) ☐ $\times 754 = 754 \times 46$ (f) $93 \times 5 \times 37 = 37 \times$ ☐ $\times 5$

(g) $27 \times 16 \times$ ☐ $= 12 \times 27 \times 16$ (h) $9 \times (10 +$ ☐ $) = 9 \times 15$

(i) $6 \times 39 = 6 \times ($ ☐ $+9)$ (j) $7 \times 44 =$ ☐ $\times (40 + 4)$

7. Fill in the blank boxes.

(a) $9 \times 30 = 9 \times 3 \times$ ☐ (b) $63 \times 40 =$ ☐ $\times 4 \times 10$

(c) $88 \times 50 =$ ☐ $\times$ ☐ $\times 10$ (d) $54 \times$ ☐ $= 54 \times 7 \times 10$

(e) $74 \times 900 = 74 \times 9 \times$ ☐ (f) $87 \times 300 =$ ☐ $\times$ ☐ $\times 100$

(g) ☐ $\times 400 = 96 \times 4 \times 100$ (h) $18 \times$ ☐ $= 18 \times 8 \times 100$

8. Fill in the blanks.

(a) There are ..... days in 5 weeks.

(b) There are ..... months in 9 years.

(c) In 6 dozen oranges there are ..... oranges.

(d) One car has 4 wheels. So, 16 cars have ..... wheels.

(e) One flower has 6 petals. So, 18 flowers have ..... petals.

(f) A grasshopper covers 16 cm in every jump. So, it covers..... cm in 5 jumps.

(g) If there are 10 bottles in one carton, there are ..... bottles in 98 cartons.

(h) If Mr Roy has 336 notes of ₹ 10, he has with him ₹ ..... in all.

(i) I throw 7 dice, all sixes. My total score is ..... .

(j) One book has 90 pages. So, 12 books have ..... pages.

(k) In one class, there are 30 students. So, there are ..... students in 19 classes.

9. Find the value of:

(a) 14×30 (b) 15×60 (c) 38×20

(d) 96×50 (e) 16×700 (f) 18×500

(g) 17×400 (h) 12×800

10. Fill in the missing digits.

(a)

H	T	O
	3	☐
×	☐	6
2	☐	8
☐	6	0
9	☐	☐

(b)

H	T	O
	☐	9
×	1	8
3	9	☐
☐	☐	0
☐	☐	☐

(c)

H	T	O
	☐	6
×	3	☐
1	5	6
☐	☐	0
☐	3	☐

11. There are 54 grapes in one bunch. If Tanvy bought 23 bunches, how many grapes does she have altogether?

12. A train had 13 compartments. There were 72 passengers in each of them. How many passengers were there in the train?

13. A bus can carry 66 children. How many children can go to picnic in 28 buses?

14. 45 students of a class collected ₹ 125 each for the Prime Minister's Relief Fund. How much money did they collect altogether?

15. Julie works as a nurse in a hospital. She works 8 hours a day for 6 days a week. How many hours does she work in 20 weeks?

16. A large hospital has 287 rooms for patients. If each room has 4 beds, how many beds are there in all?

17. A fruit seller bought 3 baskets of 196 apples each and 3 baskets of 244 mangoes each to sell in the market. How many fruits did he buy in all?

18. State whether each of the following statements is true or false.

(a) The product of two numbers is always greater than their sum. .....

(b) The product of two odd numbers is an even number. .....

(c) The product of two even numbers is an even number. .....

(d) The product of an odd and an even number is an odd number. .....

8 Division

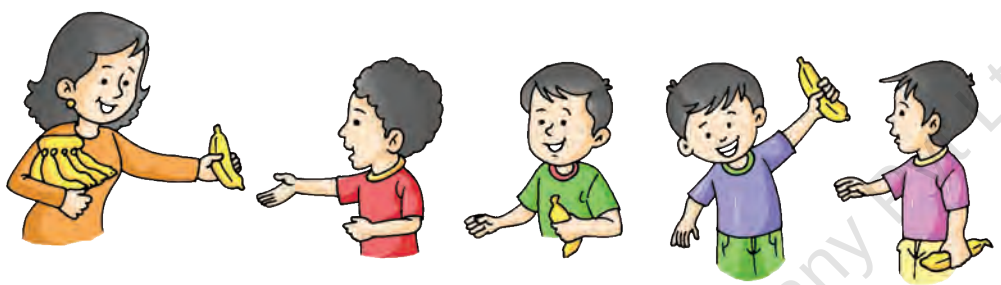
'Division' means 'equal sharing'.

Division as Distribution

Let us distribute 12 bananas equally among 4 boys.

Suppose we have a bunch of 12 bananas and there are 4 boys.

From this bunch, give 1 banana to each boy.



Now, the remaining number of bananas in the bunch is 8.

From this bunch, give 1 more banana to each boy.

Now, the remaining number of bananas in the bunch is 4.

From this bunch, give 1 more banana to each boy.

Now, no banana is left in the bunch.

Each boy gets 3 bananas.

Thus, we have divided 12 bananas into 4 equal parts and each part consists of 3 bananas.

We read it as : 12 divided by 4 is equal to 3.

We write it as : $12 \div 4 = 3$.

The symbol '÷' stands for division.

In the division sum: 12 ÷ 4 = 3, we call

12 as dividend, 4 as divisor and 3 as quotient.

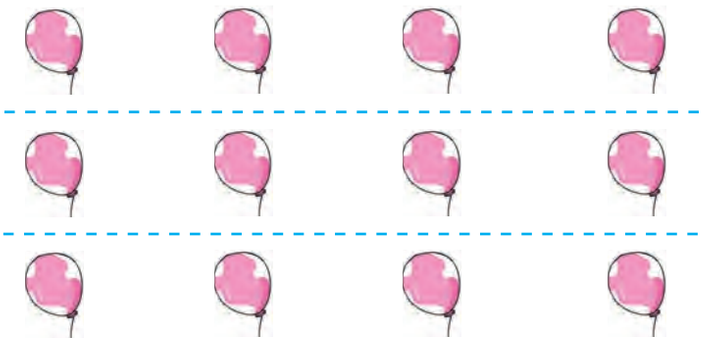
Thus, in a division sum. The

- number to be divided is called the dividend.
- number by which we divide is called the divisor.
- answer obtained on division is called the quotient.

Division as Forming Groups

We may take 12 ÷ 4 as how many fours are there in 12.

Let us take 12 balloons and divide them into groups of 4 each.



Clearly, there are 3 groups.

How many fours are there in 12? Clearly, 3.

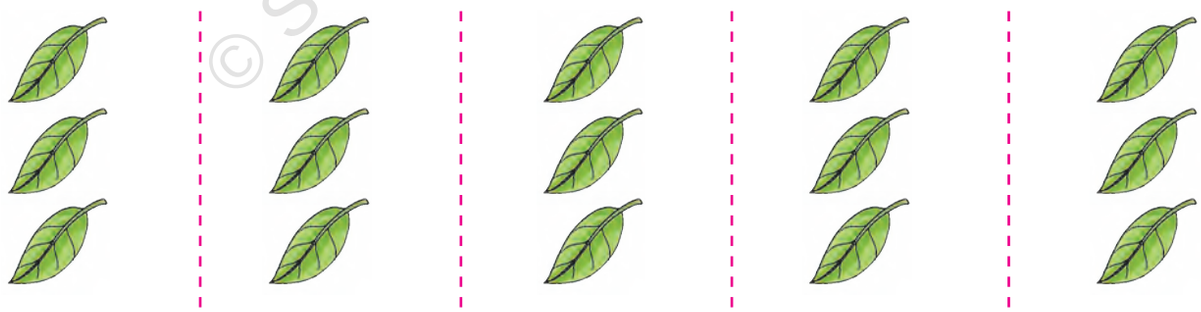
Hence, 12 ÷ 4 = 3.

Take another example.

Suppose we have to find 15 ÷ 3.

Here, we find how many threes are there in 15.

Let us take 15 leaves and divide them into groups of 3 each.



Clearly, there are 5 groups.

How many threes are there in 15? Clearly, 5.

Hence, 15 ÷ 3 = 5.

Here, dividend = 15, divisor = 3 and quotient = 5.

Division as Repeated Subtraction

Suppose we have to divide 6 by 2.

Let us take 6 objects. Go on subtracting 2 as shown below.

Total number of objects = 6

Take away 2

Number of remaining objects = 4

Take away 2

Number of remaining objects = 2

Take away 2

Number of remaining objects = 0

How many times 2 has been subtracted? Clearly, 3 times.

How many twos are there in 6 ? Clearly, 3.

Hence, $6 \div 2 = 3$.

$$\begin{array}{r} 6 \\ -\ 2 \\ \hline 4 \\ -\ 2 \\ \hline 2 \\ -\ 2 \\ \hline 0 \end{array}$$

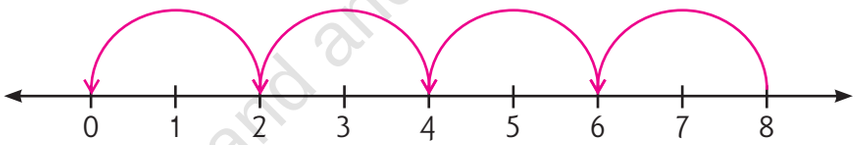
Division on the Number Line

Example 1: Use number line to find $8 \div 2$.

Solution: To find $8 \div 2$ means to find how many twos are there in 8.

Look at the number line given below.

Start from 8 and take back moves of 2 each to reach 0, as shown below.



How many moves of 2 each? Clearly, 4.

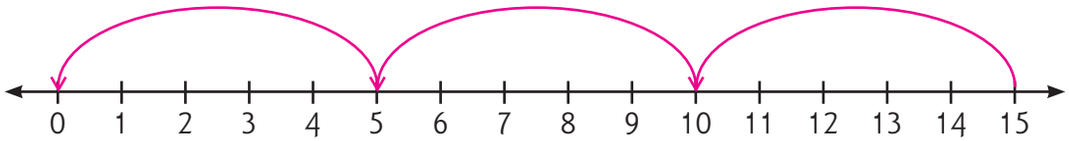
$\therefore\ 8 \div 2 = 4$

Example 2: Use number line to find $15 \div 5$.

Solution: To find $15 \div 5$ means to find how many fives are there in 15.

Look at the number line given below.

Start from 15 and take back moves of 5 each to reach 0, as shown below.



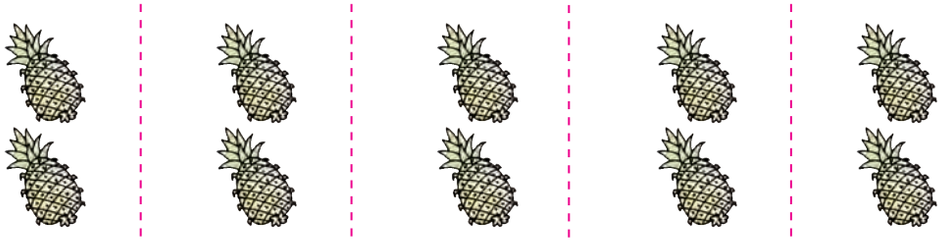
How many moves of 5 each? Clearly, 3.

So, $15 \div 5 = 3$.

Exercise 25

Look at the groups of objects and fill in the blanks.

1.



(a) How many pineapples are there in all? .....

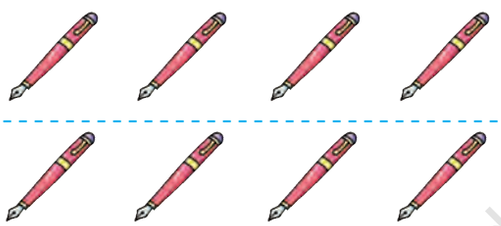
(b) How many pineapples are there in each group? .....

(c) How many groups are formed? .....

(d) How many twos are there in 10? .....

(e) 10 ÷ 2 = ...

2.



(a) How many pens are there in all? .....

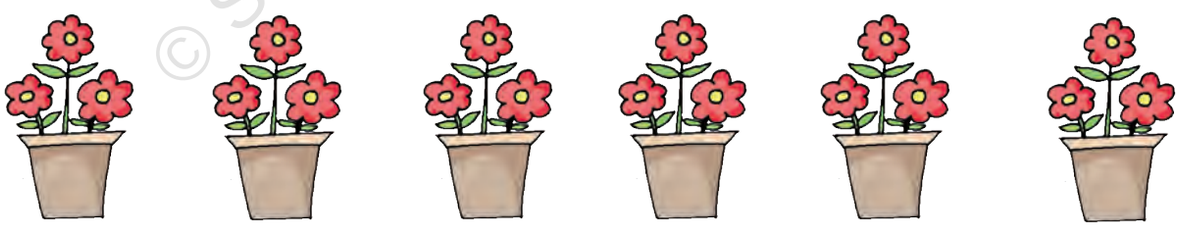
(b) How many pens are there in each group? .....

(c) How many groups are formed? .....

(d) How many fours are there in 8? .....

(e) 8 ÷ 4 = ...

3.



(a) How many flowers are there in all? .....

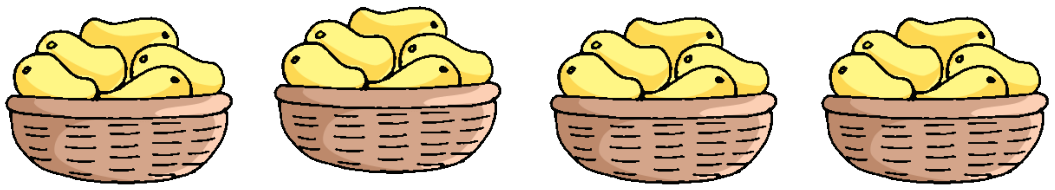
(b) How many flowers are there in each pot? .....

(c) How many pots are there? .....

(d) How many threes are there in 18? .....

(e) 18 ÷ 3 = ...

4.



(a) How many mangoes are there in all? .....

(b) How many mangoes are there in each basket? .....

(c) How many baskets are there? .....

(d) How many fives are there in 20? .....

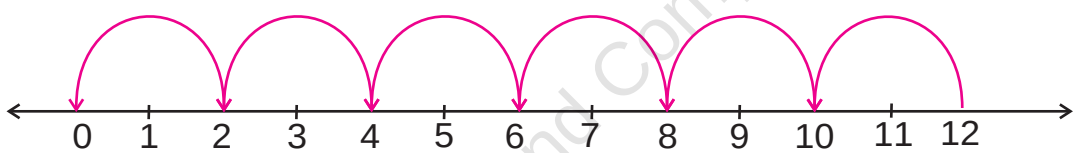
(e) 20 ÷ 5 = ...

Divide using the repeated subtraction method.

5. 9 ÷ 3	**6.** 12 ÷ 3	**7.** 16 ÷ 4	**8.** 18 ÷ 6
9. 21 ÷ 3	**10.** 20 ÷ 5	**11.** 24 ÷ 6	**12.** 30 ÷ 5
13. 24 ÷ 8	**14.** 27 ÷ 9	**15.** 40 ÷ 10	**16.** 28 ÷ 7

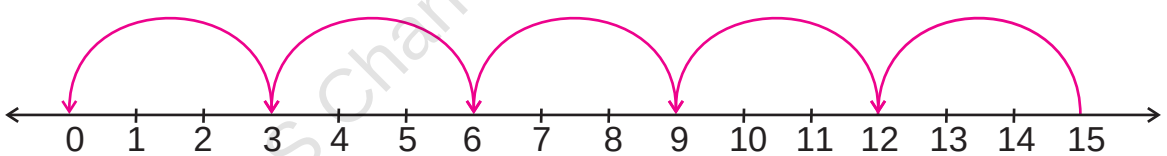
Look at the number lines given below and fill in the blanks.

17.



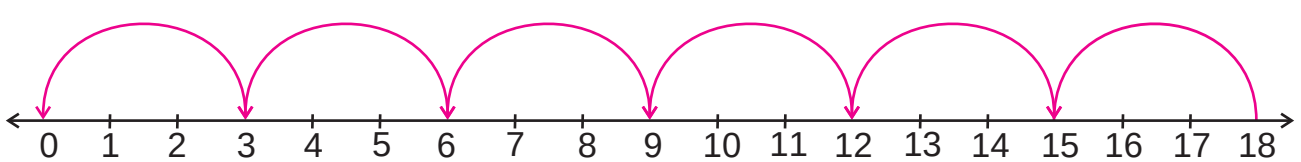
12 ÷ 2 =.....

18.



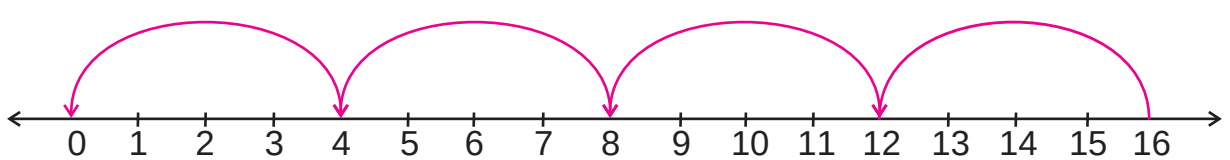
15 ÷ 3 =.....

19.



18 ÷ 3 =.....

20.



16 ÷ 4 =.....

Relation between Multiplication and Division

Let us take 4 bunches of 3 leaves each.

Total number of leaves = $4 \times 3 = 12$.

How many threes are there in 12? Clearly, 4.

$\therefore 12 \div 3 = 4$.

Again, divide the 12 leaves into 4 bunches.

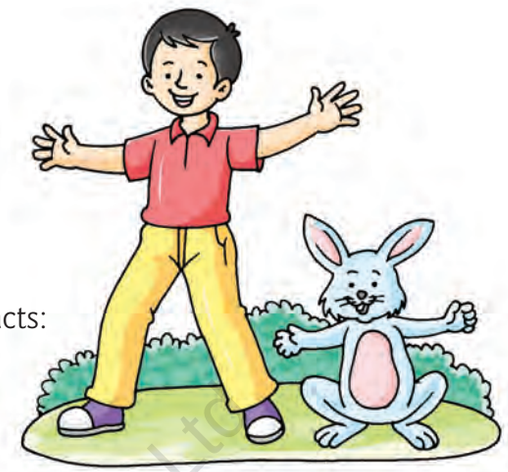
How many leaves are there in each bunch? Clearly, 3.

$\therefore 12 \div 4 = 3$.

Thus, the multiplication fact $4 \times 3 = 12$ gives rise to two division facts:

$12 \div 3 = 4$ and $12 \div 4 = 3$

It is also clear that division is the inverse of multiplication.



Exercise 26

Write two division facts for each of the following multiplication facts.

1. $3 \times 6 = 18$ **2.** $4 \times 5 = 20$ **3.** $7 \times 4 = 28$ **4.** $8 \times 3 = 24$

5. $9 \times 4 = 36$ **6.** $8 \times 5 = 40$ **7.** $4 \times 8 = 32$ **8.** $5 \times 6 = 30$

9. $7 \times 5 = 35$ **10.** $6 \times 7 = 42$ **11.** $7 \times 8 = 56$ **12.** $9 \times 7 = 63$

13. $10 \times 5 = 50$ **14.** $9 \times 1 = 9$ **15.** $1 \times 8 = 8$

Write the multiplication facts of the following division facts.

16. $24 \div 6 = 4$ **17.** $25 \div 5 = 5$ **18.** $21 \div 3 = 7$ **19.** $27 \div 3 = 9$

20. $48 \div 8 = 6$ **21.** $45 \div 9 = 5$ **22.** $54 \div 6 = 9$ **23.** $49 \div 7 = 7$

24. $9 \div 9 = 1$

Properties of Division

We know that: (any number) x 1= number itself.

Let us study the division facts based on the multiplication fact as given below:

Multiplication Fact	Division Facts
$2 \times 1 = 2$	$2 \div 1 = 2$ and $2 \div 2 = 1$
$3 \times 1 = 3$	$3 \div 1 = 3$ and $3 \div 3 = 1$
$5 \times 1 = 5$	$5 \div 1 = 5$ and $5 \div 5 = 1$
$9 \times 1 = 9$	$9 \div 1 = 9$ and $9 \div 9 = 1$ and so on.

Thus, $2 \div 1 = 2$, $3 \div 1 = 3$, $5 \div 1 = 5$, $9 \div 1 = 9$ etc.

Also $2 \div 2 = 1$, $3 \div 3 = 1$, $5 \div 5 = 1$, $9 \div 9 = 1$ etc.

Thus, we get the following two properties:

Property 1: When a non-zero number is divided by 1, the quotient is the number itself.

Thus, $6 \div 1 = 6$, $7 \div 1 = 7$, $8 \div 1 = 8$ etc.

Property 2: When a non-zero number is divided by itself, the quotient is 1.

Thus, $6 \div 6 = 1$, $7 \div 7 = 1$, $8 \div 8 = 1$ etc.

Property 3: Dividing any number by 0 has no meaning.

Let us try to divide 3 by 0 by the use of repeated subtraction.

Given number	3
Take away 0	− 0
What remains?	3
Take away 0	− 0
What remains?	3
Take away 0	− 0
What remains?	3
⋮	

and so on.

Thus, every time, we subtract 0 and get 3.

This process has no end, So, we cannot divide any number by 0.

Property 4: When 0 is divided by any non-zero number, the quotient is 0.

We know that: (any number × 0) = 0

$\therefore$ $2 \times 0 = 0$ gives $0 \div 2 = 0$, $3 \times 0 = 0$ gives $0 \div 3 = 0$.

$4 \times 0 = 0$ gives $0 \div 4 = 0$ and so on.

$\therefore$ When 0 is divided by any non-zero number, the quotient is 0.

Exercise 27

Fill in the blanks.

1. $9 \div 1 =$ .....

2. $16 \div 1 =$ .....

3. $39 \div 1 =$ .....

4. $65 \div 1 =$ .....

5. ..... $\div 1 = 8$

6. ..... $\div 1 = 25$

7. $7 \div$ ..... $= 7$

8. $19 \div$ ..... $= 19$

9. $8 \div 8 =$ .....

10. $18 \div 18 =$ .....

11. $53 \div 53 =$ .....

12. $1 \div 1 =$ .....

13. $9 \div$ ..... $= 1$

14. ..... $\div 7 = 1$

15. $14 \div$ ..... $= 1$

16. $0 \div 5 =$ .....

17. $0 \div 9 =$ .....

18. ..... $\div 8 = 0$

Division using Multiplication Tables (Long Division Method)

Example1: Divide 54 by 9, using multiplication tables.

Solution:

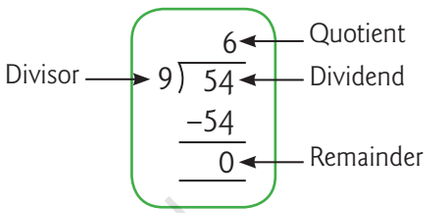
Step 1: Arrange the numerals as shown herewith.

Step 2: Recite the multiplication table of 9 till you come to 54.

9 goes into 54 six times.

∴ Quotient = 6.

Write the quotient above the dividend, as shown.



Step 3: Now, 9 × 6 = 54.

Write 54 below the dividend and subtract.

54 − 54 = 0.

Thus, we get 0 as remainder.

∴ 54 ÷ 9 = 6.

Here, Dividend = 54, Divisor = 9, Quotient = 6 and Remainder = 0.

Note: In such problems where remainder is 0, we always have

Divisor × Quotient = Dividend

Simple Problems on Equal Sharing

Example 2: A man distributes 27 apples among 9 children. How many apples does each child get?

Solution: Total number of apples = 27

Total number of children = 9

Here, we have to divide 27 apples into 9 groups.

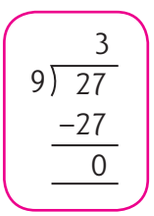
So, number of apples with each child

= number of apples in each group

= 27 ÷ 9

= 3.

Hence, each child gets 3 apples.



Exercise 28

Find the quotient when:

1. 21 ÷ 3	**2.** 24 ÷ 4	**3.** 42 ÷ 6	**4.** 30 ÷ 5
5. 48 ÷ 8	**6.** 36 ÷ 9	**7.** 35 ÷ 7	**8.** 63 ÷ 7
9. 45 ÷ 5	**10.** 64 ÷ 8	**11.** 81 ÷ 9	**12.** 40 ÷ 5
13. 72 ÷ 8	**14.** 56 ÷ 7	**15.** 48 ÷ 6	**16.** 36 ÷ 6

17. A man gives 12 bananas to 4 monkeys equally. How many bananas does each monkey get?

18. Aniket has 54 metres of rope. He cuts it into 9 equal pieces. What is the length of each piece?

19. I have 25 books. I can keep 5 books in one shelf. How many shelves do I need in my almirah?

20. Pinki has 28 toys. She puts them equally in 7 boxes. How many toys are there in each box?

21. A tailor has 56 buttons. He puts 8 buttons on one shirt. How many shirts can he make with these buttons?

22. A vegetable seller has 24 kg of tomatoes. 6 men came and bought equal quantities of tomatoes. How much tomatoes did each man buy?

23. A squirrel jumps 3 steps at a time. How many jumps will it take to cover 27 steps?

24. Anu takes 4 minutes to make one chapati. How many chapatis will she make in 32 minutes?

Division without Remainder using Long Division Method

Example1: Divide 96 by 3.

Solution:

Step1: Arrange the numbers as shown here.

Step 2: Divide 9 tens by 3.

9 tens ÷ 3 = 3 tens.

Write 3 in tens place in the quotient.

Now, 3 × 3 tens = 9 tens.

Write 9 in tens place below the dividend.

Step 3: 9 tens − 9 tens = 0 tens.

Write 0 tens as shown and bring down 6 ones.

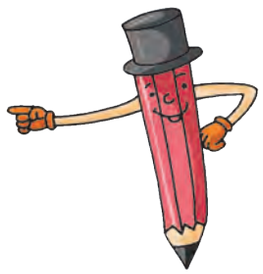
Step 4: Divide 6 ones by 3.

6 ones ÷ 3 = 2 ones.

T	O
3	2
3) 9	6
− 9	↓
0	6
	− 6
	0

Write 2 in ones place in the quotient.

Write the product $3 \times 2 = 6$ below 6 as shown.



Step 5: Subtract: $6 - 6 = 0$.

So, we get 0 as remainder.

Thus, we have:

Dividend = 96, Divisor = 3, Quotient = 32 and Remainder = 0.

Check: Divisor × Quotient = Dividend.

Here, $3 \times 32 = 96$.

Hence, the answer is verified.

Example 2: Divide 648 by 2.

Solution:

Step 1: Arrange the numerals as shown here.

Step 2: Divide 6 hundreds by 2.

6 hundreds ÷ 2 = 3 hundreds.

Write 3 in hundreds place in the quotient.

Step 3: Bring down 4 tens. Divide 4 tens by 2.

4 tens ÷ 2 = 2 tens.

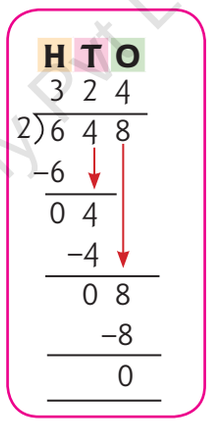
Write 2 in tens place in the quotient.

Step 4: Bring down 8 ones. Divide 8 ones by 2.

8 ones ÷ 2 = 4 ones.

Write 4 in ones place in the quotient.

Hence, 648 ÷ 2 = 324.



Example 3: Divide 804 by 4.

Solution:

Step 1: Arrange the numerals as shown here.

Step 2: Divide 8 hundreds by 4.

8 hundreds ÷ 4 = 2 hundreds.

Write 2 in hundreds place in the quotient.

Step 3: Bring down 0 tens. Divide 0 tens by 4.

0 tens ÷ 4 = 0 tens.

Write 0 in tens place in the quotient.

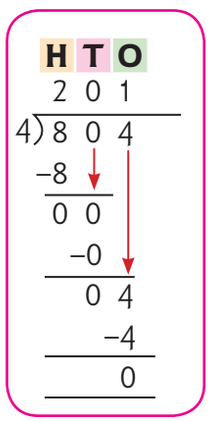
Step 4: Bring down 4 ones. Divide 4 ones by 4.

4 ones ÷ 4 = 1 one.

Write 1 in ones place in the quotient.

∴ Quotient = 201.

Hence, 804 ÷ 4 = 201.



Example 4: Divide 8462 by 2.

Solution:

Step 1: Arrange the numerals as shown below.

Step 2: Divide 8 thousands by 2.

8 thousands ÷ 2 = 4 thousands.

Write 4 in thousands place in the quotient.

Step 3: Bring down 4 hundreds.

Divide 4 hundreds by 2.

4 hundreds ÷ 2 = 2 hundreds.

Write 2 in hundreds place in the quotient.

Step 4: Bring down 6 tens.

Divide 6 tens by 2.

6 tens ÷ 2 = 3 tens.

Write 3 in tens place in the quotient.

Step 5: Bring down 2 ones.

Divide 2 ones by 2.

2 ones ÷ 2 = 1 one.

Write 1 in ones place in the quotient.

∴ Quotient = 4231.

Hence, 8462 ÷ 2 = 4231.

	Th	H	T	O
	4	2	3	1
2)	8	4	6	2
	−8			
	0	4		
		−4		
		0	6	
			−6	
			0	2
				−2
				0

Exercise 29

Divide and find the quotient.

1.	36 ÷ 3	**2.**	64 ÷ 2	**3.**	48 ÷ 4	**4.**	93 ÷ 3	**5.**	55 ÷ 5
6.	66 ÷ 6	**7.**	80 ÷ 4	**8.**	50 ÷ 5	**9.**	82 ÷ 2	**10.**	69 ÷ 3
11.	363 ÷ 3	**12.**	408 ÷ 4	**13.**	826 ÷ 2	**14.**	936 ÷ 3	**15.**	666 ÷ 6
16.	604 ÷ 2	**17.**	800 ÷ 4	**18.**	306 ÷ 3	**19.**	2468 ÷ 2	**20.**	3693 ÷ 3

Division with Regrouping

Example 1: Divide 96 by 4 and check your answer.

Solution:

T	O
2	4
4) 9	6
−8	↓
1	6
−1	6
	0

Step 1: Arrange the numerals as shown here.

Step 2: Divide 9 tens by 4.

$4 \times 2 = 8$.

Write 2 in tens place in the quotient and 8 below 9.

9 tens − 8 tens = 1 ten.

Step 3: Bring down 6 ones.

1 ten + 6 ones = 16 ones

Divide 16 ones by 4.

$4 \times 4 = 16$.

Write 4 in ones place in the quotient and 16 below 16.

Now, 16 ones − 16 ones = 0 ones.

So, we get 0 as remainder.

Thus, we have:

Dividend = 96, Divisor = 4, Quotient = 24 and Remainder = 0.

Check: Divisor × Quotient = Dividend

Here, $4 \times 24 = 96$.

Hence, the answer is correct.

So, $96 \div 4 = 24$.

Example 2 : Divide 735 by 3.

Solution:

H	T	O
2	4	5
3) 7	3	5
−6	↓	
1	3	
−1	2	↓
	1	5
	−1	5
		0

Step 1: Arrange the numerals as shown.

Step 2: Divide 7 hundreds by 3.

3 goes into 7 two times.

And, $3 \times 2 = 6$.

Write 2 in hundreds place in the quotient and 6 below 7.

7 hundreds − 6 hundreds = 1 hundred.

Step 3: Bring down 3 tens.

Now, 1 hundred + 3 tens = 13 tens.

Divide 13 tens by 3.

3 goes into 13 four times.

And , $3 \times 4 = 12$.

Write 4 in tens place in the quotient and 12 below 13.

13 tens − 12 tens = 1 ten.

Step 4: Bring down 5 ones.

Now, 1 ten + 5 ones = 15 ones.

Divide 15 ones by 3.

3 goes into 15 five times.

And, $3 \times 5 = 15$.

Write 5 in ones place in the quotient and 15 below 15.

Now, 15 ones – 15 ones = 0 ones.

$\therefore$ Remainder = 0.

Thus, Quotient = 245 and Remainder = 0.

Likewise, 4-digit numbers may also be divided.

Example 3: Divide 9051 by 7.

Solution:

Th	H	T	O
	1	2	9	3
7)	9	0	5	1
	−7	↓		
	2	0		
	−1	4	↓	
		6	5	
		−6	3	↓
			2	1
			−2	1
				0

$\therefore$ 9051 ÷ 7 = 1293.

Example 4: Divide 384 by 6.

Solution:

Step 1: Arrange the numerals as shown.

Step 2: First, we start with hundreds.

6 does not go into 3.

$\therefore$ We start with tens.

3 hundreds + 8 tens = 38 tens.

And, $6 \times 6 = 36$.

Write 6 in tens place in the quotient and 36 below 38.

38 tens – 36 tens = 2 tens.

H	T	O
	6	4
6)	3	8	4
	−3	6	↓
		2	4
		−2	4
			0

Step 3: Bring down 4 ones.

2 tens + 4 ones = 24 ones.

Divide 24 ones by 6.

6 goes into 24 four times.

And, $6 \times 4 = 24$.

Write 4 in the quotient and 24 below 24.

24 ones − 24 ones = 0 ones.

∴ Remainder = 0.

Thus, Quotient = 64.

Hence, $384 \div 6 = 64$.

Example 5: Divide 7504 by 8.

Solution:

Th	H	T	O
	9	3	8
8)	7	5	0	4
	−7	2	↓	
		3	0	↓
		−2	4	
			6	4
			−6	4
				0

∴ $7504 \div 8 = 938$.

Example 6: Divide 9045 by 9.

Solution:

Th	H	T	O
	1	0	0	5
9)	9	0	4	5
	−9	↓		
	0	0	↓	
		− 0		↓
			0	4
			− 0	
				4	5
			− 4	5
					0

∴ $9045 \div 9 = 1005$.

Exercise 30

Divide and find the quotient.

1. 57 ÷ 3	**2.** 60 ÷ 4	**3.** 75 ÷ 5	**4.** 68 ÷ 4
5. 90 ÷ 6	**6.** 84 ÷ 7	**7.** 95 ÷ 5	**8.** 96 ÷ 8
9. 81 ÷ 3	**10.** 76 ÷ 4	**11.** 84 ÷ 6	**12.** 92 ÷ 4
13. 314 ÷ 2	**14.** 972 ÷ 4	**15.** 630 ÷ 5	**16.** 744 ÷ 6
17. 920 ÷ 8	**18.** 805 ÷ 7	**19.** 756 ÷ 7	**20.** 414 ÷ 3
21. 5601÷ 3	**22.** 8064 ÷ 7	**23.** 6175 ÷ 5	**24.** 9432 ÷ 8
25. 6138 ÷ 6			

Divide and find the quotient.

26. 356 ÷ 4	**27.** 225 ÷ 9	**28.** 510 ÷ 6	**29.** 776 ÷ 8
30. 711 ÷ 9	**31.** 3276 ÷ 7	**32.** 4504 ÷ 8	**33.** 9051 ÷ 7
34. 7136 ÷ 8	**35.** 5706 ÷ 9		

Word Problems

Example 1: A bottle of coke costs ₹ 6. How many bottles of coke can be bought for ₹ 90?

Solution:

Total cost of bottles purchased = ₹ 90

Cost of one bottle = ₹ 6

Number of bottles purchased = 90 ÷ 6

= 15

Hence, 15 bottles can be bought for ₹ 90.

T	O
	1 5
6)	9 0
	−6 ↓
	3 0
	−3 0
	0

Example 2: **A boy is cycling at the rate of 8 km per hour. How long does he take to cover 192 km?**

Solution:

Total distance to be covered = 192 km.

Distance covered in 1 hour = 8 km.

∴ Time taken = (192 ÷ 8) hours

= 24 hours.

Hence, the boy takes 24 hours to cover 192 km.

H	T	O
	2	4
8) 1	9	2
−1	6	↓
	3	2
	−3	2
		0

Example 3: **The product of two numbers is 686. If one of them is 7, find the other.**

Solution:

Product of two numbers = 686.

One number = 7.

The other number = 686 ÷ 7

= 98.

Hence, the other number is 98.

H	T	O
	9	8
7) 6	8	6
−6	3	↓
	5	6
	−5	6
		0

Example 4: **5202 nails are packed equally in 9 boxes. How many nails are there in each box?**

Solution:

Number of nails in 9 boxes = 5202.

Number of nails in 1 box = 5202 ÷ 9

= 578.

Hence, number of nails in each box = 578.

Th	H	T	O
	5	7	8
9) 5	2	0	2
− 4	5	↓	↓
	7	0	
	− 6	3	↓
		7	2
		−7	2
			0

Example 5: A poultry farm produces 3115 eggs in one week. How many eggs are produced each day?

Solution:

We know that 1 week = 7 days.

Number of eggs produced in 7 days = 3115.

Number of eggs produced each day

= 3115 ÷ 7

= 445.

Hence, the number of eggs produced each day is 445.

Th	H	T	O
	4	4	5
7)	3	1	1	5
−	2	8	↓	
	3	1		
−	2	8		↓
		3	5	
−		3	5	
			0	

Exercise 31

1. From a ribbon of length 56 cm, how many pieces each 4 cm long can be cut?

2. 6 toy guns cost ₹ 108. What is the cost of one toy gun?

3. There are 7 days in a week. How many weeks are there in 112 days?

4. 162 books are arranged on 9 shelves. Each shelf contains the same number of books. How many books are there on each shelf?

5. 504 students were divided into 6 equal groups. How many students are there in each group?

6. A pen costs ₹ 8. How many such pens can be had for ₹ 768?

7. 9 T-shirts cost ₹ 864. What is the cost of one T-shirt?

8. 6 students can sit on a bench. How many benches are needed for 852 students?

9. 7 carts can carry 525 boxes of apples. How many boxes can each cart carry?

10. How many times can you take away 8 from 368?

11. A man distributed ₹ 1101 equally among his three sons. How much money did each son get?

12. A car goes 8 km in one litre of petrol. How much petrol will it consume to go 1040 km?

13. The cost of 7 bicycles is ₹ 6041. Find the cost of one bicycle.

14. The price of a notebook is ₹ 9.How many notebooks can be purchased for ₹ 7713?

15. The product of two numbers is 7304. If one of them is 8, what is the other number?

Division with Remainder

Note here that in the process of division, once we get a remainder which is less than the divisor, we cannot continue the process any further.

Example 1: Divide 237 by 6 and check the result.

Solution: We have:

H	T	O
	3	9
6)	2	3 7
−	1	8 ↓
	5	7
−	5	4
		3

Here, 3 < 6, i.e., remainder is less than divisor, we cannot continue the process futher.

∴ Quotient = 39 and Remainder = 3.

Check: Dividend = 237, Divisor = 6, Quotient = 39 and Remainder = 3.

Always remember that:

Divisor × Quotient + Remainder = Dividend.

Now, Divisor × Quotient + Remainder = 6 × 39 + 3

= 234 + 3

= 237

= Dividend.

Hence, the answer is correct.

Example 2: Divide 3709 by 8 and check the result.

Solution: We have:

Th	H	T	O
	4	6	3
8)	3	7	0	9
−3	2	↓	
	5	0	
−	4	8	↓
		2	9
	−	2	4
			5

∴ Quotient = 463 and Remainder = 5.

Check : Here, Dividend = 3709, Divisor = 8, Quotient = 463 and Remainder = 5.

Now, Divisor × Quotient + Remainder = 8 × 463 + 5

= 3704 + 5

= 3709

= Dividend.

Hence, the answer is correct.

Division by 10

Example 3: Find the quotient and remainder when:

(a) 68 ÷10 (b) 253 ÷10 (c) 1637 ÷ 10

What do you conclude?

Solution: We have:

(a)

T	O
	6
10) 6	8
−6	0
	8

(b)

H	T	O
	2	5
10) 2	5	3
−2	0	↓
	5	3
	−5	0
		3

(c)

Th	H	T	O
	1	6	3
10) 1	6	3	7
−1	0	↓	
	6	3	
	−6	0	↓
		3	7
		−3	0
			7

∴ Quotient = 6, Remainder = 8

∴ Quotient = 25, Remainder = 3

∴ Quotient = 163, Remainder = 7

Conclusion: When a number is divided by 10, the quotient is obtained by removing the ones digit from the number. The digit at ones place is the remainder.

Exercise 32

Find the quotient and remainder. Also check your answer in each case.

1. 537÷ 2	**2.** 407÷ 3	**3.** 159 ÷ 4	**4.** 278 ÷ 5
5. 476 ÷ 3	**6.** 591÷ 4	**7.** 796 ÷ 9	**8.** 700 ÷ 8
9. 487÷ 6	**10.** 479 ÷ 9	**11.** 453 ÷ 7	**12.** 701÷ 8
13. 615 ÷ 9	**14.** 1023 ÷7	**15.** 2109 ÷ 6	**16.** 3514 ÷ 7
17. 4756 ÷ 8	**18.** 5938 ÷ 9	**19.** 2307÷ 4	**20.** 5213 ÷ 6
21. 347÷10	**22.** 514 ÷10	**23.** 1037÷10	**24.** 2416 ÷10

More Word Problems

Example: **700 students are divided equally into 6 groups. How many students are there in each group? How many are leftover?**

Solution:

Total number of students = 700

Number of groups = 6

Number of students in each group = 700 ÷ 6

On dividing 700 by 6, we get 116 as quotient and 4 as remainder.

Hence, there are 116 students in each group and 4 students are leftover.

H	T	O
	1	1	6
6	7	0	0
	−6		
	1	0	
		−6	
		4	0
		−3	6
			4

Exercise 33

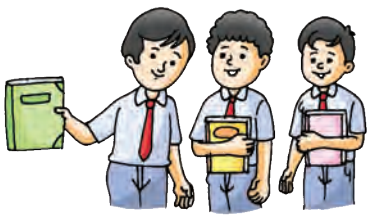
1. How many groups of 10 children each can be made from a class of 43 children? How many children will be leftover?

2. How many bundles of 12 pencils each can be formed from 100 pencils? How many pencils are leftover?

3. 96 trees are to be planted. If 7 trees are planted in each row, how many rows are formed? How many plants are leftover?

4. At the most 6 girls can sit on a bench. What is the minimum number of benches required for 45 girls to sit?

[**Hint :** 45 when divided by 6 gives quotient = 7, remainder = 3; 7 benches are occupied and 3 girls remain, who can sit on 1 bench.]



5. 108 exercise books were divided equally among 10 boys. How many will each get and how many exercise books remain?

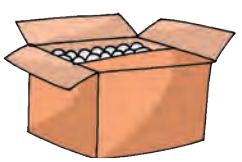
6. There are 7 days in a week and 365 days in a year. How many weeks are there in a year? How many days are left?

7. A pen costs ₹ 6. A man had ₹ 1154 with him with which he bought as many pens as he could. How many pens did he buy and how much money is left with him?

8. The bookshop gives 9 notebooks to each student. If there are 1272 notebooks in the shop, how many students can get the notebooks? How many notebooks are left?

9. 1878 saplings were bought to be planted in rows of 8 saplings each. How many rows are formed and how many saplings are left?

10. 4764 bulbs are to be packed equally in 7 cartons. How many bulbs are there in each carton? How many bulbs are left?



Things to Remember

1. In a division sum $a \div b = c$, we call 'a' as dividend, 'b' as divisor and 'c' as quotient.

2. When a non-zero number is divided by 1, the quotient is the number itself.

3. When a non-zero number is divided by itself, the quotient is 1.

4. Division by zero is meaningless.

5. When 0 is divided by any non-zero number, the quotient is 0.

6. Divisor × Quotient + Remainder = Dividend.

7. When a number is divided by 10, the quotient is obtained by removing the ones digit from the number. The digit at ones place is the remainder.

Assessment 6

QUESTION BAG 1

(Objective Type Questions)

Tick (✓) the correct answer.

1. Division is a process of repeated ..... .

(a) addition ☐ (b) subtraction ☐

(c) multiplication ☐ (d) None of these ☐

2. Divide 81 by me, the answer is me. Divide 54 by me it's 6 you will see. Who am I?

(a) 6 ☐ (b) 7 ☐ (c) 8 ☐ (d) 9 ☐

3. Dividend =

(a) remainder × quotient + divisior ☐ (b) quotient × divisor + remainder ☐

(c) quotient + divisor × remainder ☐ (d) none of these ☐

4. How many times should 6 be subtracted from 48 to give 0?

(a) 4 ☐ (b) 6 ☐ (c) 7 ☐ (d) 8 ☐

5. 6 eggs are needed to bake a cake. If Mrs Roy uses 66 eggs, how many cakes has she baked?

(a) 9 ☐ (b) 10 ☐ (c) 11 ☐ (d) 12 ☐

6. 135 ÷ 135 = ?

(a) 0 ☐ (b) 1 ☐ (c) 2 ☐ (d) 135 ☐

7. 0 * 12 = 0

This will be true if * is replaced by

(a) × or ÷ ☐ (b) + or ÷ ☐ (c) + or − ☐ (d) × or + ☐

8. Sanchit has 47 oranges. If he puts them equally in 5 baskets, how many oranges will be leftover?

(a) 2 ☐ (b) 3 ☐ (c) 5 ☐ (d) 7

9. If 94 is divided by 4, the remainder is

(a) 0 ☐ (b) 2 ☐ (c) 4 ☐ (d) None of these ☐

10. The quotient of 256 ÷ 8 is

(a) 24 ☐ (b) 27 ☐ (c) 28 ☐ (d) 32 ☐

11. The dividend in the expression 240 ÷ 6 = 40 is

(a) 0 ☐ (b) 6 ☐ (c) 40 ☐ (d) 240 ☐

12. Out of the following divisions, one has a different quotient. Which is it?

(a) 12 ÷ 4 ☐ (b) 24 ÷ 8 ☐ (c) 36 ÷ 9 ☐ (d) 15 ÷ 5 ☐

13. Out of the following divisions, one has a different quotient. Which is it?

(a) 63 ÷ 9 ☐ (b) 48 ÷ 6 ☐ (c) 32 ÷ 4 ☐ (d) 64 ÷ 8 ☐

14. Difference of 1000 and 200, when divided by 4 gives

(a) 400 ☐ (b) 200 ☐ (c) 300 ☐ (d) 250 ☐

15. There are 8 chairs at each table in a restaurant. There are 96 chairs in all. Which number sentence can be used to find the number of tables in the restaurant?

(a) 8 × 96 = ... ☐ (b) 96 − ... = 8 ☐ (c) 8 + ... = 96 ☐ (d) 96 ÷ 8 = ... ☐

16. In which of the following cases do we obtain 1 as quotient?

(a) Number divided by itself ☐ (b) Number divided by 0 ☐

(c) 1 divided by a number ☐ (d) Number divided by 1 ☐

17. How many 8s are there in 120?

(a) 12 ☐ (b) 15 ☐ (c) 40 ☐ (d) 41 ☐

18. The number of weeks in 91 days is

(a) 7 ☐ (b) 13 ☐ (c) 17 ☐ (d) 73 ☐

19. Sonal has ₹ 50. A pen costs ₹ 7 each. What is the greatest number of pens Sonal can buy?

(a) 6 ☐ (b) 7 ☐ (c) 8 ☐ (d) 9 ☐

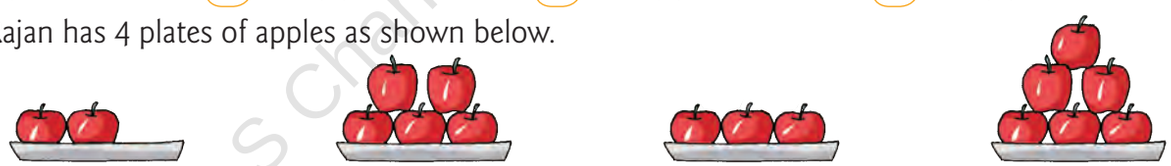
20. A man has ₹ 58 with him. What is the maximum number of 5 rupee coins he can have?

(a) 10 ☐ (b) 11 ☐ (c) 12 ☐ (d) None of these ☐

21. Last week, 228 grade 3 students rode on 4 buses on a field trip. The same number of students rode on each bus. How many students rode on each bus?

(a) 52 ☐ (b) 57 ☐ (c) 62 ☐ (d) 67 ☐

22. Rajan has 4 plates of apples as shown below.



If Rajan puts the apples equally in the four plates, what should be the number of apples in each plate?

(a) 3 ☐ (b) 4 ☐ (c) 5 ☐ (d) 6 ☐

23. When the largest 3-digit number is divided by 3, we get

(a) 33 ☐ (b) 303 ☐ (c) 333 ☐ (d) 111 ☐

24. If 25 people contribute ₹ 3 each for the purchase of 5 articles each of the same price, what is the price of each article?

(a) ₹ 5 ☐ (b) ₹ 15 ☐ (c) ₹ 20 ☐ (d) ₹ 25 ☐

25. The remainder obtained, when 420 is divided by 8 is

(a) 0 ☐ (b) 1 ☐ (c) 2 ☐ (d) 4 ☐

QUESTION BAG 2

1. Fill in the blanks.

(a) The answer of division is called the ..... .

(b) The number which divides is called the ..... .

(c) If a number is ..... by itself, the answer is 1.

(d) If 3 × 350 =1050, then 1050 ÷ 3 =.....

2. State whether each of the following statements is true or false.

(a) Division is equal distribution. .....

(b) If 32 ÷ 4 = 8, then 4 × 8 = 32. .....

(c) If 40 ÷ 10 = 4, then 4 ÷ 10 = 40. .....

(d) Any number divided by 0 is the number itself. .....

(e) In 27 ÷ 3 = 9, 9 is the dividend. .....

(f) If 4 is the quotient and 8 is the divisor, then the dividend is 12. .....

(g) We can change the order of numbers in division. .....

(h) Dividend is always greater than or equal to the divisor. .....

(i) The remainder is always smaller than the divisor. .....

(j) We start the division process from the ones place. .....

(k) 0 ÷ any non-zero number = 0. .....

(l) Any number ÷ 0 = 0. .....

3. Fill in the divisor.

(a) 56 ÷ ..... = 8 (b) 45 ÷ ..... = 9 (c) 72 ÷ ..... = 9

(d) 36 ÷ ..... = 6 (e) 24 ÷ ..... = 6 (f) 64 ÷ ..... = 8

(g) 42 ÷ ..... = 7 (h) 49 ÷ ..... = 7 (i) 63 ÷ ..... = 7

(j) 30 ÷ ..... = 6

4. Fill in the dividend.

(a) ..... ÷ 9 = 5 (b) ..... ÷ 9 = 9

(c) ..... ÷ 9 = 2 (d) ..... ÷ 8 = 4

(e) ..... ÷ 6 = 8 (f) ..... ÷ 5 = 8

(g) ..... ÷ 7 = 8 (h) ..... ÷ 10 = 10

5. How many flowers are there in each vase, if we put:

(a) 18 flowers in 3 vases
(b) 28 flowers in 7 vases
(c) 45 flowers in 5 vases
(d) 30 flowers in 6 vases
(e) 81 flowers in 9 vases
(f) 56 flowers in 8 vases

6. Fill in the blanks.

(a) 63 days make ..... weeks.
(b) 48 pencils make ..... dozens.
(c) A necklace has 11 beads. So ..... necklaces have 110 beads.
(d) If 27 coins are equally placed in 3 bags, there are ..... coins in each bag.
(e) If 8 persons travel in a jeep then ..... jeeps are needed for 56 persons.
(f) Arushi distributes 54 chocolates among her 9 friends. Then each friend gets ..... chocolates .

7. The missing addends in each problem are all the same. Find the missing numbers.

(a) ..... + ... + ... + ... + ... = 40
(b) ..... + ... + ... + ... = 16
(c) ..... + ... + ... + ... = 28
(d) ..... + ... + ... + ... + ... + ... + ... = 63
(e) ..... + ... + ... + ... + ... + ... + ... = 35

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

(a) 16 ÷ 8 ..... 27 ÷ 3
(b) 14 ÷ 2 ..... 45 ÷ 5
(c) 36 ÷ 4 ..... 18 ÷ 3
(d) 28 ÷ 4 ..... 35 ÷ 5
(e) 24 ÷ 3 ..... 28 ÷ 4
(f) 12 ÷ 3 ..... 24 ÷ 6

9. Fill in the blank boxes.

(a) 15 ÷ 15 = ☐
(b) 10 ÷ 1 = ☐
(c) 6 ÷ 6 = ☐
(d) 0 ÷ 7 = ☐
(e) 18 ÷ 1 = ☐
(f) 4 ÷ 4 = ☐
(g) 9 ÷ ☐ = 1
(h) 8 ÷ ☐ = 8
(i) ☐ ÷ 2 = 0
(j) ☐ ÷ 1 = 79

10. For a division sum, answer the following.

(a) If 7 is the divisor, can we have 6 as remainder? .....

(b) If 9 is the divisor, can we have 9 as remainder? .....

(c) If 2 is the divisor, can we have 4 as remainder? .....

11. Complete the following table.

		Dividend	Divisor	Quotient	Remainder
(a)	76 ÷ 8	.....	.....	.....	.....
(b)	38 ÷ 6	.....	.....	.....	.....
(c)	54 ÷ 5	.....	.....	.....	.....
(d)	30 ÷ 4	.....	.....	.....	.....
(e)	83 ÷ 9	.....	.....	.....	.....
(f)	67 ÷ 7	.....	.....	.....	.....
(g)	73 ÷ 9	.....	.....	.....	.....

12. Complete the following table.

		Quotient	Remainder
(a)	46 ÷ 10	.....	.....
(b)	379 ÷ 10	.....	.....
(c)	700 ÷ 10	.....	.....
(d)	7776 ÷ 10	.....	.....
(e)	..... ÷ 10	2	3
(f)	..... ÷ 10	34	7
(g)	..... ÷ 10	56	0
(h)	..... ÷ 10	83	5

13. Fill in the blanks.

(a) There are ..... eights in 33 and ..... will be leftover.

(b) There are ..... fives in 36 and ..... will be leftover.

(c) There are ..... sixes in 40 and ..... will be leftover.

(d) There are ..... fours in 34 and ..... will be leftover.

14. A fruit seller had to arrange 992 apples in 8 boxes. How many apples were there in one box?

15. How many times is 1736 than 4?

16. Fill in the missing digit(s) in the quotient.

(a) $8\overline{)256}$ (quotient: $\square 2$)

(b) $7\overline{)665}$ (quotient: $\square 5$)

(c) $6\overline{)522}$ (quotient: $8\square$)

(d) $2\overline{)568}$ (quotient: $\square 8\square$)

(e) $5\overline{)815}$ (quotient: $1\square 3$)

(f) $4\overline{)664}$ (quotient: $\square 6\square$)

(g) $9\overline{)621}$ (quotient: $6\square$)

(h) $5\overline{)935}$ (quotient: $1\square 7$)

17. Divide the smallest 4-digit number by 8.

18. Divide the greatest 3-digit number by 7. Find the quotient and remainder.

19. Find the quotient.

(a) 504 ÷ 3 (b) 364 ÷ 7 (c) 670 ÷ 5

(d) 774 ÷ 6 (e) 7488 ÷ 8 (f) 8953 ÷ 7

(g) 7578 ÷ 9 (h) 8487 ÷ 9

20. Find the quotient and remainder.

(a) 594 ÷ 4 (b) 447 ÷ 6 (c) 889 ÷ 7

(d) 755 ÷ 9 (e) 2908 ÷ 6 (f) 5051 ÷ 7

(g) 8076 ÷ 9

9 Money

For our daily needs, we purchase goods from the market.

In exchange, we pay money to the shopkeeper. This money is in the form of coins and notes.

Indian Currency

The type of money used in a particular country is called its currency.

The currency of our country India is the Rupee.

Coins

5 paise

10 paise

20 paise

25 paise

50 paise

1 rupee

2 rupee

5 rupee

10 rupee

Notes

We have currency notes of the following denominations.

1 rupee note

2 rupee note

5 rupee note

10 rupee note

20 rupee note

50 rupee note

100 rupee note

200 rupee note

500 rupee note

2000 rupee note

Expressing Money in Words

In common language, we express an amount of say 50 rupees 85 paise in words, as '*Rupees fifty and paise eighty-five.*'

Similarly, we write 6 rupees 4 paise in words as: '*Rupees six and paise four*'.

Expressing Money in Figures or in Symbolic Form

We use the symbols '₹' for rupees, 'p' for paise.

We use a point (.) for separating rupees and paise. The number on the left side of the point shows rupees and the number on the right side shows paise.

Thus, 75 rupees 80 paise is expressed in figures as ₹ 75.80.

65 paise is expressed in figures as ₹ 0.65.

Here, 0 on the left of the dot shows that there are no rupees.

An Important Note:

We write the number of paise as a 2-digit numeral.

Thus, we write 7 paise as 07 paise, 8 paise as 08 paise and so on.

Note : Coins of 5 p, 10 p, 20 p, 25 p, 50 p, and notes of denominations 1 rupee and 2 rupee are not in use.

Conversion of Rupees into Paise

We know that,

1 Rupee = 100 Paise

Rule : To convert rupees into paise, we multiply the amount in rupees by 100.

Thus, 8 rupees = (8 × 100) paise = 800 paise.

14 rupees = (14 × 100) paise = 1400 paise.

Conversion of Rupees and Paise into Paise

Rule : To convert 'rupees and paise' into paise, we multiply the amount in rupees by 100 and add to it the number of paise.

Thus, 13 rupees 45 paise = (13 × 100) paise + 45 paise

= 1300 paise + 45 paise

= 1345 paise.

₹ 25.60 = 25 rupees 60 paise

= (25 × 100) paise + 60 paise

= 2500 paise + 60 paise

= 2560 paise.

Short Method : To convert an amount expressed in figures into paise, we remove the symbol '₹' and the dot and thus get the number of paise.

Thus, ₹ 27.65 = 2765 paise

₹ 12.02 = 1202 paise

₹ 0.40 = 40 paise etc.

Conversion of Paise into Rupees and Paise

Rule : To convert paise into rupees, we put a point after 2 digits from the right of the given number showing paise. The numeral on the left of the point indicates the number of rupees and that on its right shows the number of paise.

Thus, 1875 paise = ₹ 18.75 = 18 rupees 75 paise.

2060 paise = ₹ 20.60 = 20 rupees 60 paise.

Converting Amounts into Various Denominations

Method: For converting the given amount of money into number of coins of a given denomination, we take the following steps.

Step 1: Convert the given amount into paise.

Step 2: Divide the number of paise by 5, 10, 20, 25, 50 respectively to find the number of 5-paise coins, 10-paise coins, 20-paise coins, 25-paise coins and 50-paise coins.

Example : Convert ₹ 34.50 into the following denominations:

(a) 5-paise (b) 10-paise (c) 25-paise (d) 50-paise

Solution : ₹ 34.50 = 3450 paise

(a) Number of 5-paise coins = 3450 ÷ 5
= 690.

(b) Number of 10-paise coins = 3450 ÷ 10
= 345.

(c) Number of 25-paise coins = 3450 ÷ 25
= 138.

(d) Number of 50-paise coins = 3450 ÷ 50
= 69.

Exercise 34

1. Write the following amounts in words.

(a) 30 rupees 65 paise (b) 8 rupees 70 paise (c) 53 rupees 18 paise

(d) 106 rupees 5 paise (e) 28 rupees (f) 1 rupee 1 paisa

(g) 93 paise (h) 4 paise

2. Write the following amounts in figures.

(a) 46 rupees 75 paise (b) 100 rupees 68 paise (c) 5 rupees 46 paise

(d) 74 rupees (e) 300 rupees (f) 17 rupees 9 paise

(g) 4 rupees 4 paise (h) 1 rupee 1 paisa (i) 1 rupee

(j) 73 paise (k) 3 paise (l) 1 paisa

3. Write the following amounts in words.

(a) ₹ 70.35 (b) ₹ 8.98 (c) ₹ 1.64

(d) ₹ 62.08 (e) ₹ 16.00 (f) ₹ 2.05

(g) ₹ 0.43 (h) ₹ 0.50 (i) ₹ 0.08

(j) ₹ 248.70 (k) ₹ 306.07 (l) ₹ 476.00

4. Convert the following amounts into paise.

(a) 5 rupees (b) 32 rupees (c) 60 rupees

(d) 6 rupees 69 paise (e) 58 rupees 10 paise (f) 72 rupees 19 paise

(g) 24 rupees 6 paise (h) 7 rupees 9 paise (i) 1 rupee 1 paisa

(j) ₹ 0.95 (k) ₹ 0.10 (l) ₹ 0.07

5. Convert each of the following into rupees and paise.

(a) 2965 p (b) 2200 p (c) 3304 p

(d) 3020 p (e) 1001 p (f) 400 p

(g) 187 p (h) 603 p (i) 20348 p

(j) 30003 p (k) 160 p (l) 207 p

6. How many 5-paise coins will make:

(a) ₹ 8.90 (b) ₹ 7.65 (c) ₹ 18.25 (d) ₹ 20.00

7. How many 10-paise coins will make:

(a) ₹ 6.40 (b) ₹ 9.10 (c) ₹ 13.00 (d) ₹ 19.30

8. How many 20-paise coins will make:

(a) ₹ 5.60 (b) ₹ 14.40 (c) ₹ 18.00 (d) ₹ 20.80

9. How many 25-paise coins will make:

(a) ₹ 6.25 (b) ₹ 20.00 (c) ₹ 16.50 (d) ₹ 8.25

10. How many 50-paise coins will make:

(a) ₹ 7.50 (b) ₹ 11.00 (c) ₹ 17.50 (d) ₹ 18.00

11. How many 2-rupee coins will make:

(a) ₹ 10.00 (b) ₹ 30.00 (c) ₹ 50.00 (d) ₹ 100.00

Addition of Money

First method : By Converting the Amounts into Paise

Step 1 : Write the amounts in figures.

Step 2 : Convert the amounts into paise.

Step 3 : Find the sum in paise.

Step 4 : Convert the sum into rupees and paise.

Study the following examples.

Example 1: Add the amounts : 39 rupees 65 paise and 24 rupees 78 paise.

Solution: Given amounts are : ₹ 39.65 and ₹ 24.78.

Now,	₹ 39.65	=	3965 paise
+	₹ 24.78	=	2478 paise
	Sum	=	6443 paise
		=	₹ 64.43.

Hence, the sum of the given amounts is ₹ 64.43.

Simpler Method for Addition of Money

Step 1 : Write the amounts in figures.

Step 2 : Arrange the amounts in columns such that the points remain in one column.

Step 3 : Add the amounts as ordinary numbers.

Step 4 : Put a point in the sum in the point's column.

The following example will make the idea more clear.

Example 2 : Add the amounts: 48 rupees 97 paise and 7 rupees 9 paise.

Solution : Given amounts are : ₹ 48.97 and ₹ 7.09.

Arranging the given amounts in columns and adding, we get:

	₹ 48.97
+	₹ 7.09
Sum =	₹ 56.06

Hence, the sum of the given amounts is ₹ 56.06.

Exercise 35

Add the following amounts by converting into paise.

1. 18 rupees 36 paise and 29 rupees 58 paise
2. 49 rupees 75 paise and 9 rupees 65 paise
3. 56 rupees 95 paise and 18 rupees 5 paise
4. 64 rupees 6 paise and 36 rupees 9 paise

Add the following amounts.

5. ₹ 87.56 + ₹ 64.84 =

6. ₹ 53.65 + ₹ 39.78 =

7. ₹ 67.95 + ₹ 9.75 =

8. ₹ 283.97 + ₹ 9.08 =

9. ₹ 326.74 + ₹ 77.96 =

10. ₹ 537.85 + ₹ 68.29 =

11. ₹ 63.75 + ₹ 79.05 + ₹ 52.80 =

12. ₹ 103.55 + ₹ 287.65 + ₹ 8.05 =

13. ₹ 684.55 + ₹ 189.65 + ₹ 9.07 =

Arrange the following amounts in columns and add.

14. ₹ 75.75, ₹ 85.85 and ₹ 67.95
15. ₹ 457.95, ₹ 7.77 and ₹ 66.85
16. ₹ 99.90, ₹ 9.90 and ₹ 0.95
17. ₹ 8.80, ₹ 0.88 and ₹ 0.08

Add the following amounts.

18. 19 rupees 76 paise, 9 rupees 9 paise, 18 rupees 8 paise and 98 paise.
19. 90 paise, 85 paise and 102 rupees 45 paise.
20. 101 rupees 50 paise, 76 rupees 35 paise, 5 rupees 5 paise and 65 paise.

Subtraction of Money

First Method: By Converting the Given Amounts into Paise

Suppose we want to subtract one amount from the other.

Step 1 : Convert both the amounts into paise.

Step 2 : Find their difference in paise.

Step 3 : Convert the difference in rupees and paise.

Study the following examples.

Example 1: Subtract ₹ 19.35 from ₹ 57.20.

Solution: We have :

₹ 5	7 . 2	0	=	5	7	2	0	p
₹ 1	9 . 3	5	=	1	9	3	5	p
Difference			=	3	7	8	5	p
			=	₹	3	7 . 8	5	

Hence, the difference between ₹ 57.20 and ₹ 19.35 is ₹ 37.85.

Simpler Method of Subtraction

Step 1 : Write the given amounts in figures.

Step 2 : Arrange the amounts in columns such that the points remain in one column.

Step 3 : Subtract the amounts as ordinary numbers.

Step 4 : Put a point in the difference in the point's column.

The following example will make the idea clear.

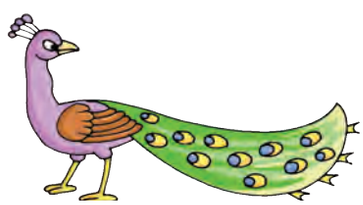
Example 2: Find the difference between 8 rupees 5 paise and 16 rupees 2 paise.

Solution: The given amounts are ₹ 8.05 and ₹ 16.02.

Clearly, ₹ 16.02 > ₹ 8.05.

Now,

	₹ 1	6 .	0	2
–	₹	8 .	0	5
Difference =	₹	7 .	9	7



Hence, the difference between the given amounts is ₹ 7.97.

Exercise 36

Subtract the following amounts by converting them into paise.

1. 19 rupees 85 paise from 37 rupees 40 paise

2. 53 rupees 75 paise from 60 rupees 10 paise

3. 68 rupees 36 paise from 100 rupees 5 paise

4. 29 rupees 25 paise from 41 rupees 20 paise

Subtract:

5.
₹ 6 8 . 7 5
− ₹ 3 9 . 9 0

6.
₹ 9 6 . 5 0
− ₹ 0 5 . 9 5

7.
₹ 1 0 0 . 0 0
− ₹ 3 4 . 6 5

8.
₹ 1 9 2 . 0 4
− ₹ 6 . 0 5

9.
₹ 3 1 5 . 4 0
− ₹ 2 7 8 . 6 5

10.
₹ 2 1 8 . 3 4
− ₹ 9 8 . 7 6

11.
₹ 6 0 0 . 2 0
− ₹ 1 8 3 . 5 4

12.
₹ 2 0 7 . 0 5
− ₹ 9 8 . 8 7

13.
₹ 3 0 9 . 0 6
− ₹ 1 1 1 . 0 8

Find the difference between the following amounts.

14. ₹ 16.08 and ₹ 50.00

15. ₹ 47.06 and ₹ 7.75

16. ₹ 63.15 and ₹ 100.00

17. ₹ 36.95 and ₹ 200.10

18. ₹ 0.86 and ₹ 1.05

19. ₹ 8.08 and ₹ 0.29

Subtract:

20. 94 paise from 20 rupees

21. 9 rupees 9 paise from 11 rupees 6 paise

Word Problems

The concept of addition and subtraction of amounts of money are very useful in making important calculations in everyday life.

Study the following examples.

Solved Examples

Example 1: Varun purchased a notebook for ₹ 14.85, an eraser for ₹ 1.50, a geometry box for ₹ 26.75 and a sheet of graph paper for 35 paise. How much money he should pay to the stationer?

Solution:

Cost of a notebook	=	₹ 14.85
Cost of an eraser	=	₹ 1.50
Cost of a geometry box	=	₹ 26.75
Cost of a sheet of paper	=	+ ₹ 0.35
Total amount	=	₹ 43.45

Hence, Varun must pay ₹ 43.45 to the stationer.

Example 2: On a particular day, Mohan, a rickshaw puller, earned ₹ 82 and spent ₹ 36.50. How much did he save on that day?

Solution:

Mohan's earnings	=	₹ 82.00
Mohan's expenditure	=	− ₹ 36.50
Mohan's savings	=	₹ 45.50

Hence, Mohan saved ₹ 45.50 on that day.

Example 3: The price of a bucket is ₹ 37.50 and that of a bag is ₹ 73.25. Which one is costlier? And by how much?

Solution:

Price of a bucket = ₹ 37.50

Price of a bag = ₹ 73.25

Clearly, ₹ 73.25 > ₹ 37.50.

So, the bag is costlier than the bucket.

	₹	73.25
−	₹	37.50
	₹	35.75

Hence, the bag is costlier than the bucket by ₹ 35.75.

Example 4: Sachin purchased a bat for ₹ 57.65 and a ball for ₹ 36.75 from the same shop. He gave a 100-rupee note to the shopkeeper. How much money would the shopkeeper return to Sachin?

Solution:

Cost of a bat	=		₹	57	.	65
Cost of a ball	=	+	₹	36	.	75
Total cost of a bat and a ball	=		₹	94	.	40

Money given to the shopkeeper	=		₹	100	.	00
Total cost of a bat and a ball	=	−	₹	94	.	40
Money returned by the shopkeeper	=		₹	5	.	60

Hence, ₹ 5.60 would be returned to Sachin by the shopkeeper.

Exercise 37

1. Minu purchased a doll for ₹ 85.50 and a drum for ₹ 117.75 from a toy-shop. How much did she spend?
2. On her birthday, Pinki got ₹ 101.50 from her mother and ₹ 98.75 from her sister. How much money did she get in all?
3. Suneeta purchased a chain for ₹ 13.45, a ribbon for ₹ 8.75 and bangles for ₹ 12.80. How much money did she spend in all?

4. Mr Verma purchased vegetables for ₹ 27.65, fruits for ₹ 48.75 and cheese for ₹ 34.60. How much money did he pay to the shopkeeper?
5. Nandini had to pay ₹ 165 as her school fees, buy a geometry box for ₹ 68.70 and a pen for ₹ 18.80. How much money did she need?
6. Vikram bought stamps for ₹ 29.65 at the post office and paid for it with a 50-rupee note. How much money did he get back?

7. Renuka went for shopping with ₹ 730 in her purse. When she came back after shopping, she was left with ₹ 35.65. How much did she spend on shopping?

8. Kamal purchased a loaf of bread for ₹ 3.85, butter for ₹ 18.75, eggs for ₹ 16.65 and a cake for ₹ 18.50. He gave the shopkeeper a 100-rupee note. How much money did he get back?

9. Mr Gupta bought a pair of shoes for ₹ 261.95, a shirt for ₹ 182.75, a tie for ₹ 85.30 and a pair of socks for ₹ 34.80. If he gave the shopkeeper a 500-rupee note, how much more he has to pay?

10. Pankaj had ₹ 403 in his bank account. He withdrew ₹ 249.45. What is the balance in his account now?

11. An ink pen costs ₹ 25.10 and a ball pen costs ₹ 10.25. Which is more costly and by how much ?

12. Bala had ₹ 76.80 with her. How much more money does she need to buy books worth ₹ 123.50?

13. Lata has ₹ 256.80 and her sister Kavita has ₹ 324.40. How much more money does Kavita have than Lata?

14. Add ₹ 47.65 to ₹ 54.45 and subtract the sum from ₹ 110.

15. Subtract the difference of ₹ 183.25 and ₹ 164.48 from ₹ 50.

16. Subtract the difference of ₹ 110 and ₹ 80.30 from ₹ 60.15.

17. By how much is ₹ 36.44 less than ₹ 50.20?

18. By how much does ₹ 51.60 exceed ₹ 28.85?

Multiplication of Money by a Whole Number

Step 1 : Write the given amount of money in figures.

Step 2 : Multiply the amount by the given whole number as we multiply numbers.

Step 3 : In the product, put the point (.) after the second digit from the right.

Solved Examples

Example 1: Multiply ₹ 18.36 by 9.

Solution:

	₹ 18.36
×	9
₹	165.24

Hence, ₹ 18.36 × 9 = ₹ 165.24.

Example 2: If one chocolate bar costs ₹ 13.75, what is the cost of 8 chocolate bars?

Solution : Cost of 1 chocolate bar = ₹ 13.75

Cost of 8 chocolate bars = ₹ (13.75 × 8)

= ₹ 110.00

Hence, the cost of 8 chocolate bars is ₹ 110.00.

	₹ 13.75
×	8
₹	110.00

Exercise 38

Find the following products.

1. ₹ 16.30 × 5 = _____

2. ₹ 29.45 × 6 = _____

3. ₹ 108.75 × 8 = _____

4. ₹ 256.43 × 7 = _____

5. ₹ 173.44 × 4 = _____

6. ₹ 200.40 × 10 = _____

7. A bat costs ₹ 44.65. Find the cost of 6 such bats.

8. A packet of grapes costs ₹ 78.50. What is the cost of 8 such packets?

9. Find the cost of 4 pairs of canvas shoes, if each pair costs ₹ 136.95.

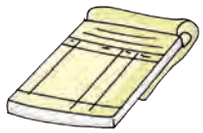
10. One box of crayons costs ₹ 24.45. What is the cost of 8 such boxes?

11. An envelope costs 85 paise. What is the cost of 10 such envelopes?

12. The cost of one umbrella is ₹ 165.25. Find the cost of 12 such umbrellas.

Activity Time

Your mother must be visiting some store or mall in your neighbourhood to shop for daily requirements. Next time when she comes back from shopping, open up the shopping bags yourself. Take out the items one by one and prepare a list by writing down the items purchased, the quantity or number of pieces purchased and the unit value. Then calculate the total price paid for each item and add the prices of all the items to calculate the total amount of the bill. Tally this amount with the bill your mother has got from the store/mall.



This activity helps you to learn how to read or prepare bills.

The same shall help you solve some questions as the one given below.

Manick bought 3 kg of sugar at the rate of ₹ 24.85 per kg, 2 tea packs at ₹ 87.90 per pack and 3 litres of milk at ₹ 31.35 per litre. Find the total amount he has to pay for all the items.

Things to Remember

1. We use the symbol ₹ for rupees and P for paise. We use a point (.) for separating rupees and paise.
2. To convert rupees into paise, we multiply the amount in rupees by 100.
3. To convert an amount expressed in figures into paise, we remove the symbol ₹ and the point.
4. **Addition of Money:**

   Step 1 : Write the amounts in figures.

   Step 2 : Arrange the amounts in columns such that the points remain in one column.

   Step 3 : Add the amounts as ordinary numbers.

   Step 4 : Put a point in the sum in the point's column.
5. **Subtraction of Money:**

   Step 1 : Write the given amounts in figures.

   Step 2 : Arrange the amounts in columns such that the points remain in one column.

   Step 3 : Subtract as ordinary numbers.

   Step 4 : Put a point in the difference under point's column.
6. **Multiplication of Money by a Whole Number:**

   Step 1 : Write the given amount of money in figures.

   Step 2 : Multiply the amount by the given whole number as we multiply numbers.

   Step 3 : In the product, put a point (.) after the second digit from the right.

Assessment 7

QUESTION BAG 1

(Objective Type Questions)

Tick (✓) the correct answer.

1. 8 rupees 25 paise is the same as

(a) ₹ 8.25 ☐ (b) 825 paise ☐

(c) Both (a) and (b) ☐ (d) None of these ☐

2. Which Indian currency note does not exist?

(a) ₹ 5 ☐ (b) ₹ 10 ☐ (c) ₹ 15 ☐ (d) ₹ 20 ☐

3. How many 25 paise coins will you get for a 5 rupee coin?

(a) 15 ☐ (b) 20 ☐ (c) 25 ☐ (d) 30 ☐

4. How many 50 paise coins will you get for a ₹ 10 note?

(a) 20 ☐ (b) 25 ☐ (c) 30 ☐ (d) None of these ☐

5. Ashish spent ₹ 56.75 at the fair. Rohan spent ₹ 18.35 more than Ashish. How much did Rohan spend?

(a) ₹ 72.40 ☐ (b) ₹ 74.10 ☐ (c) ₹ 75.10 ☐ (d) ₹ 76.60 ☐

6. Sheetal bought 5 notebooks each costing ₹ 5 and 2 pencils each costing ₹ 2. How much money does she have to pay?

(a) ₹ 29 ☐ (b) ₹ 30 ☐ (c) ₹ 34 ☐ (d) ₹ 39 ☐

7. Meeta bought oranges priced at 2 oranges for ₹ 16. What was the total cost of 5 oranges?

(a) ₹ 28 ☐ (b) ₹ 35 ☐ (c) ₹ 40 ☐ (d) ₹ 45 ☐

8. Pencils cost ₹ 1.60 each and erasers cost ₹ 1.20 each. Find the cost of 5 pencils and 5 erasers.

(a) ₹ 10.80 ☐ (b) ₹ 12.60 ☐ (c) ₹ 13.20 ☐ (d) ₹ 14 ☐

9. A tailor is paid ₹ 15 for stitching a shirt. If he is paid ₹ 180 in all, how many shirts did he stitch?

(a) 12 ☐ (b) 18 ☐ (c) 24 ☐ (d) 60 ☐

10. Rahul needs ₹ 32 to buy a book. Which of the following combinations of notes and coins has a total value of ₹ 32?

(a) 

(b) 

(c) 

(d) 

11. Vishesh goes to the market with ₹ 36 in his pocket and buys two of the following items. How much money is he left with?


₹ 18


₹ 24


₹ 16

(a) ₹ 1 ◯ (b) ₹ 2 ◯ (c) ₹ 4 ◯ (d) ₹ 5 ◯

12. Anu pays ₹ 2350 as monthly rent for her house. How much rent does she pay in 6 months?

(a) ₹ 13500 ◯ (b) ₹ 13800 ◯ (c) ₹ 13950 ◯ (d) ₹ 14100 ◯

QUESTION BAG 2

1. Fill in the blanks.

(a) ₹ 1 = ... paise

(b) ₹ 3.60 = ... paise

(c) 8 paise = ₹ .....

(d) ₹ 0.09 = ... paise

(e) ₹ 0.90 = ... paise

(f) 800 paise = ₹ .....

(g) 405 paise = ₹ .....

(h) ₹ 21 = ... paise

(i) 7600 paise = ₹ .....

(j) 7775 p = ₹ .....

(k) 8 rupees 7 paise = ₹ .....

(l) 9 rupees 10 paise = ₹ .....

(m) ..... 20 p coins make ₹ 20.

(n) ₹ 16.08 = ... rupees ..... paise.

2. Subtract 55 paise from 11 rupees.

3. Shishir wants to buy a pencil box for ₹ 56.50, a notebook for ₹ 29.80 and pens for ₹ 26.75. He had ₹ 100 with him. How much more will he need to buy these things?

4. Rajni's mother went for shopping for her birthday party. She bought birthday caps for ₹ 96.80, balloons for ₹ 37.75 and paper plates for ₹ 49.40. If she gave the shopkeeper a ₹ 500 note, how much money did the shopkeeper return to her?

5. A new year card costs ₹ 12.75. Soumya wants to send cards to 9 of his friends. How much will the cards cost?

6. The cost of 1 litre of petrol is ₹ 64.76. What is the cost of 8 litres of petrol?

7. A boy bought 20 sweets each costing 58 paise. How much did he pay?

8. A man spends ₹ 38.45 on his food everyday. How much will he spend on food in 1 week?

9. A ball pen costs ₹ 9.75 and a gel pen costs ₹ 16.40. Which is costlier and by how much?

10 Fractions

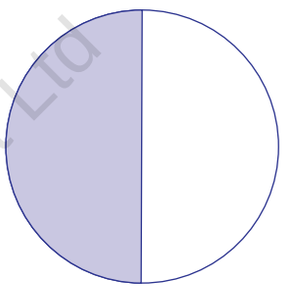
Introduction

Fraction means 'part or fragment of a whole object or collection'.

One-half

When an object is divided into two equal parts, then each part is called one-half of the whole.

Divide a circle into 2 equal parts.



Shade 1 part.

The shaded part is 1 part out of 2 equal parts.

The shaded part is called one-half.

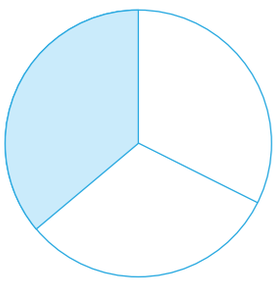
We express one-half by $\frac{1}{2}$ and read it as one by two or one over two.

The unshaded part is also 1 part out of 2 equal parts. So, the unshaded part is also one-half.

One-third, two-thirds

When an object is divided into three equal parts, then each part is called one-third of the whole.

Divide a circle into 3 equal parts. Shade 1 part.



The shaded part is 1 part out of 3 equal parts.

The shaded part is called one-third.

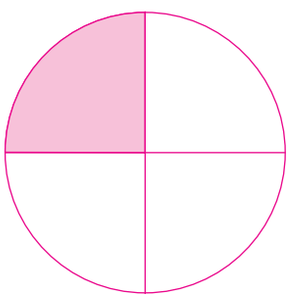
We express one-third by $\frac{1}{3}$ and read it as one by three or one over three.

The unshaded part is 2 parts out of 3 equal parts. We say that the unshaded part is two-thirds of the whole.

We express two-thirds by $\frac{2}{3}$ and read it as two by three or two over three.

One-fourth, two-fourths, three-fourths

When an object is divided into four equal parts, then each part is called one-fourth (or quarter) of the whole.



Divide a circle into 4 equal parts. Shade 1 part.

The shaded part is 1 part out of 4 equal parts.

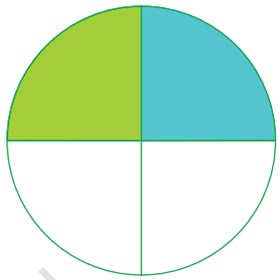
The shaded part is called one-fourth.

We express one-fourth by $\frac{1}{4}$ and read it as one by four or one over four.

The unshaded part is 3 parts out of 4 equal parts.

The unshaded part is, thus, three-fourths of the whole.

We express three-fourths by $\frac{3}{4}$ and read it as three by four or three over four.



In the adjoining figure, 2 parts out of 4 equal parts are shaded.

So, the shaded part is two-fourths of the whole, written as $\frac{2}{4}$.

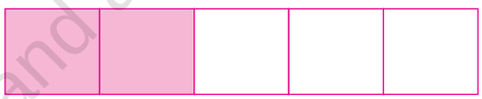
One-fifth, two-fifths etc.

Take a rectangular paper strip and divide it into 5 equal parts as shown. Shade 1 part.

The shaded part is one-fifth of the whole strip, written as $\frac{1}{5}$.

The unshaded part is 4 parts out of 5 equal parts. So, the unshaded part is four-fifths of the whole strip, written as $\frac{4}{5}$.

Now, look at the paper strip shown below.



Here, the shaded part is 2 parts out of 5 equal parts.

So, the shaded part is two-fifths of the whole strip, written as $\frac{2}{5}$.

The unshaded part is 3 parts out of 5 equal parts.

It is thus, three-fifths of the whole strip, written as $\frac{3}{5}$.

Fractional Numbers and Fractions

The numbers such as one-half, one-third, two-thirds, one-fourth, two-fourths, three-fourths and two-fifths etc. are known as fractional numbers and their symbols $\frac{1}{2}, \frac{1}{3}, \frac{2}{3}, \frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{2}{5}$ etc. are known as fractions.

Some more examples are given below:

Shaded parts		Fraction	Fractional number	Figure
(i)	3 parts out of 5 equal parts	$\frac{3}{5}$	Three-fifths	
(ii)	5 parts out of 6 equal parts	$\frac{5}{6}$	Five-sixths	
(iii)	4 parts out of 7 equal parts	$\frac{4}{7}$	Four-sevenths	
(iv)	3 parts out of 8 equal parts	$\frac{3}{8}$	Three-eighths	
(v)	1 part out of 9 equal parts	$\frac{1}{9}$	One-ninth	

How many halves are there in a whole?

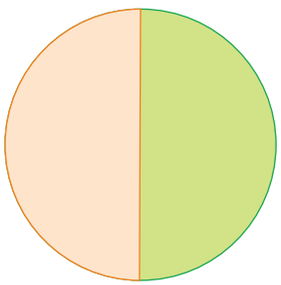
Divide a circle into 2 equal parts.

Then, each part is one-half.

$\therefore$ *Two halves make a whole.*

Now, 2 parts out of 2 equal parts make a whole.

$\therefore \quad \frac{2}{2} = \text{whole} = 1.$



Two-halves or whole

How many one-thirds are there in a whole?

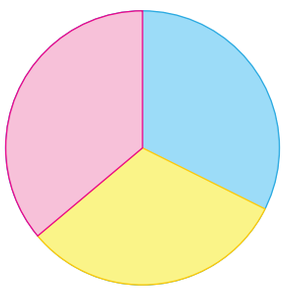
Divide a circle into 3 equal parts.

Then, each part is one-third.

Now, three-thirds make a whole.

Thus, 3 parts out of 3 equal parts make a whole.

$\therefore \quad \frac{3}{3} = \text{whole} = 1.$



Three-thirds or whole

How many one-fourths are there in a whole?

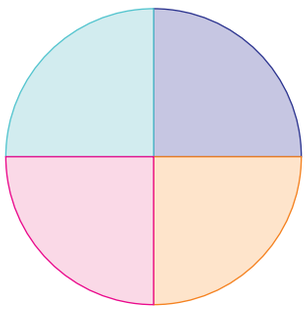
Divide a circle into 4 equal parts.

Then, each part is one-fourth.

Here, four-fourths make a whole.

Thus, four parts out of 4 equal parts make a whole.

$\therefore \quad \frac{4}{4} = \text{whole} = 1.$

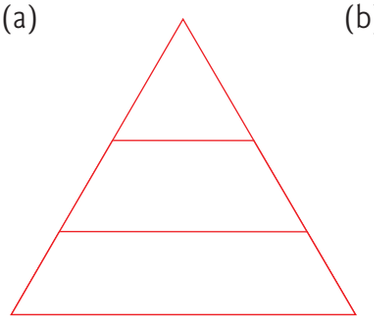


Four-fourths or whole

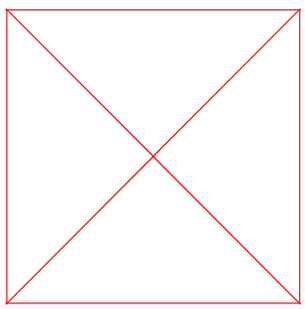
Exercise 39

1. Tick (✓) the figures which are divided into equal parts.

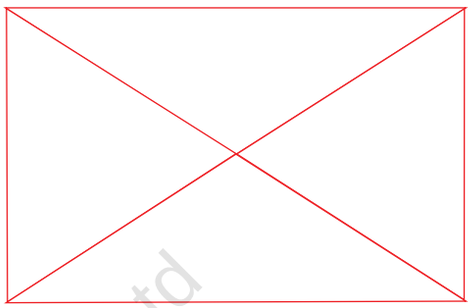
(a)



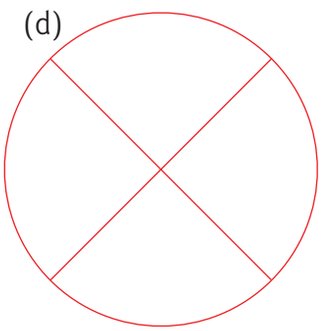
(b)



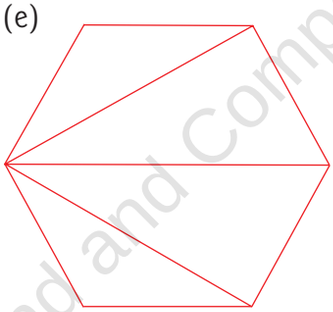
(c)



(d)



(e)



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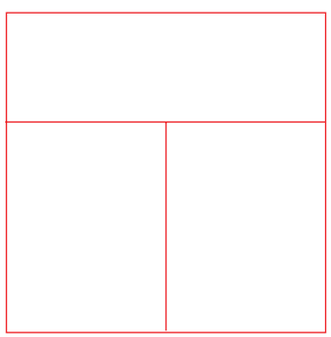
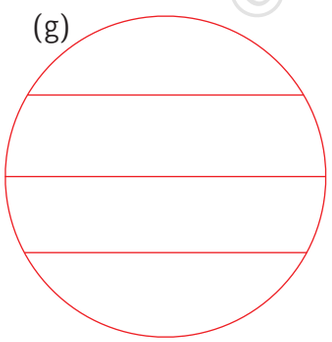
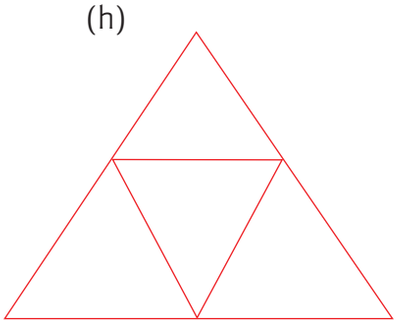


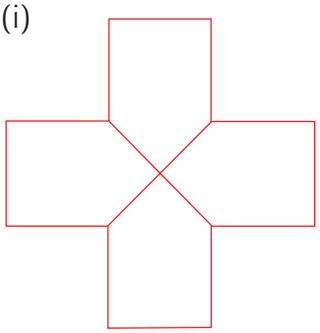
(g)



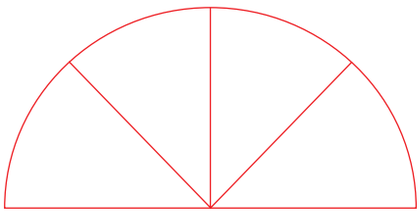
(h)



(i)



(j)



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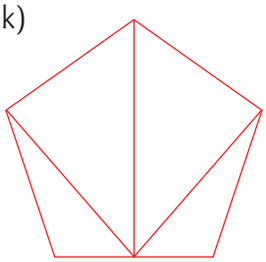
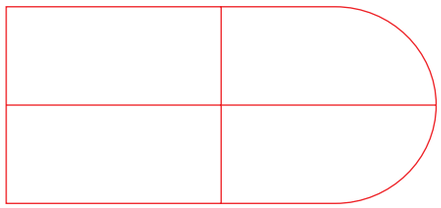


(l)



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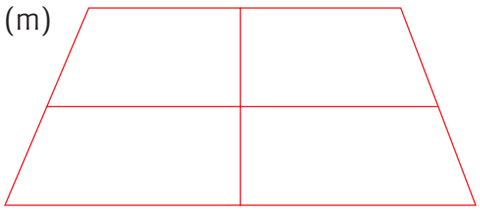
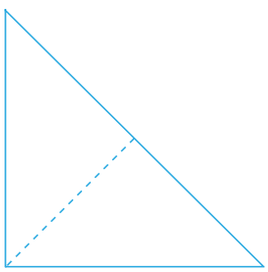
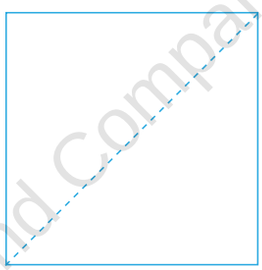


2. Shade with a pencil one-half or $\frac{1}{2}$ of each of the following figures.

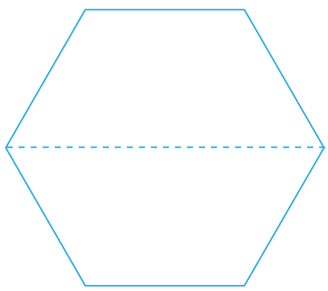
(a)



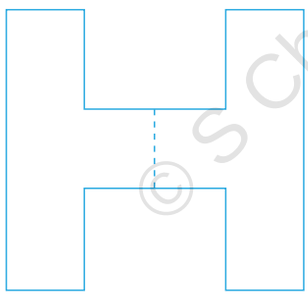
(b)



(c)

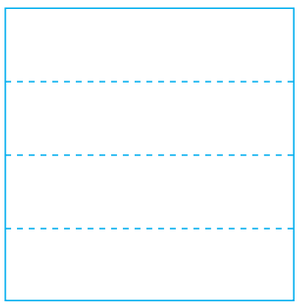


(d)



(e)

(f)



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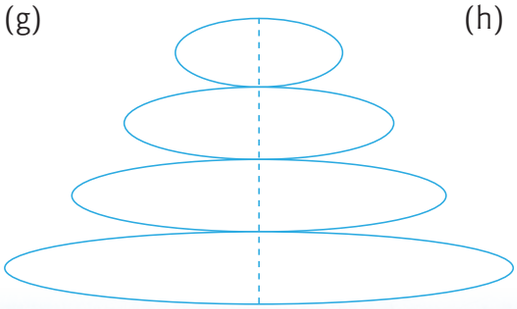
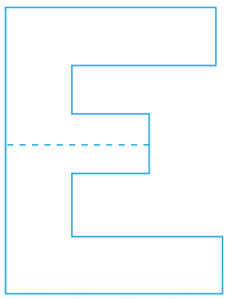
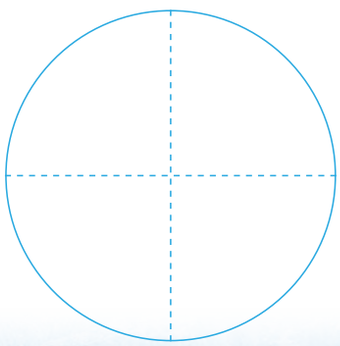


(h)

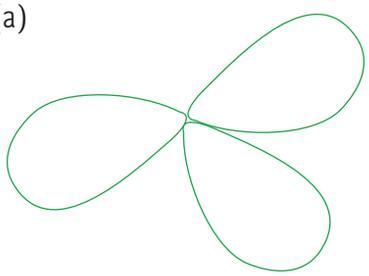


(i)

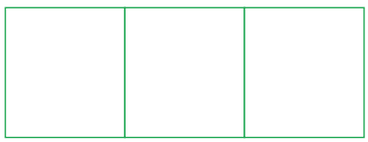


3. Shade with a pencil one-third or $\frac{1}{3}$ of each of the following figures.

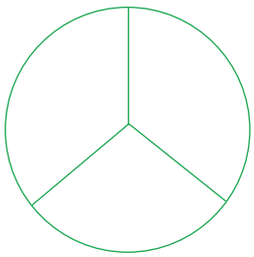
(a)



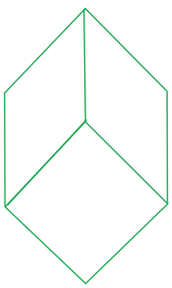
(b)



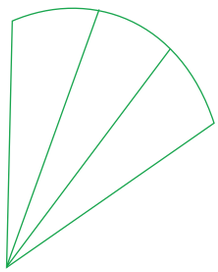
(c)



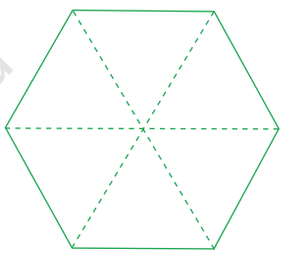
(d)



(e)

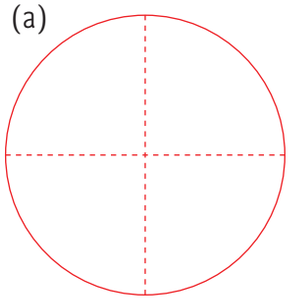


(f)

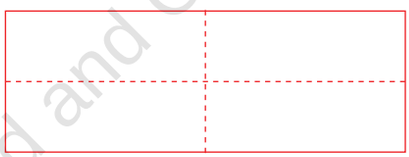


4. Shade with a pencil one-fourth or $\frac{1}{4}$ of each of the following figures.

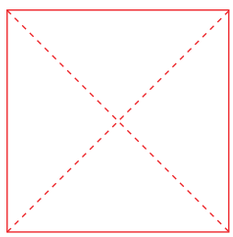
(a)



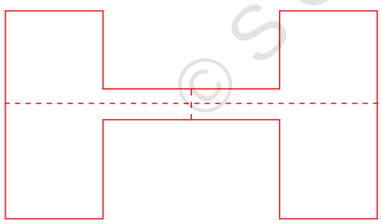
(b)



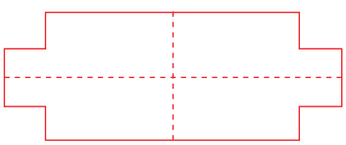
(c)



(d)

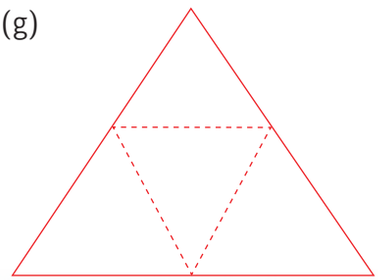


(e)

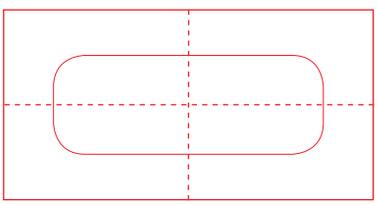


(f)

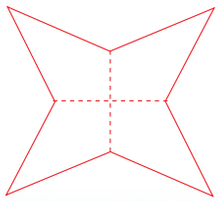
(g)



(h)

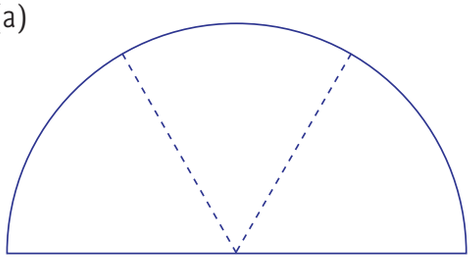


(i)

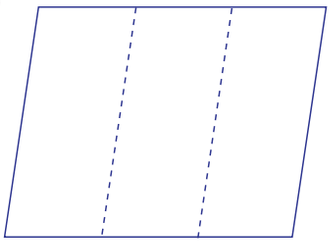


5. Shade with a pencil two-thirds or $\frac{2}{3}$ of each of the following figures.

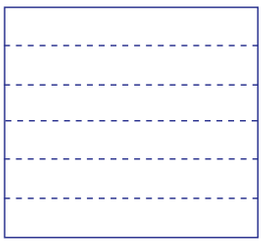
(a)



(b)

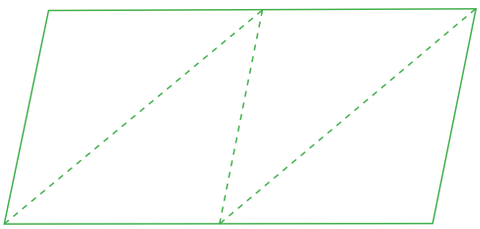


(c)

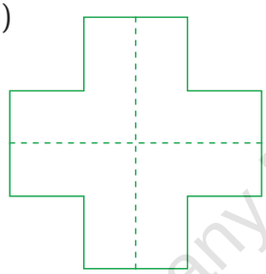


6. Shade with a pencil three-fourths or $\frac{3}{4}$ of each of the following figures.

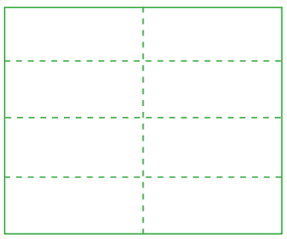
(a)



(b)

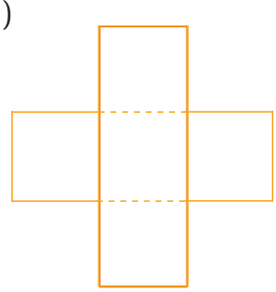


(c)

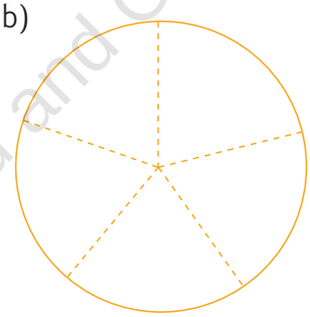


7. Shade with a pencil $\frac{3}{5}$ part of each of the following figures.

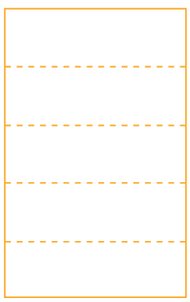
(a)



(b)

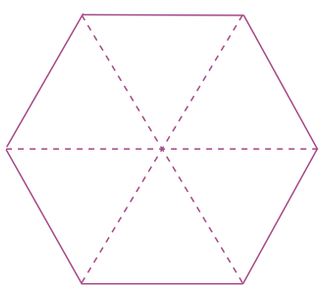


(c)



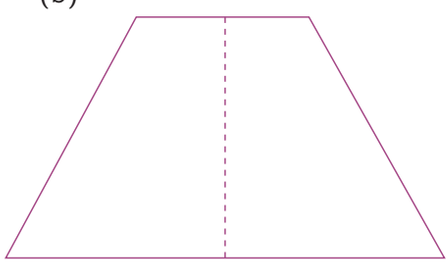
8. Shade a part of each whole to represent the given fraction.

(a)



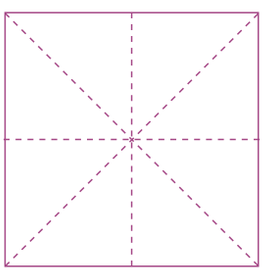
$\frac{1}{6}$

(b)



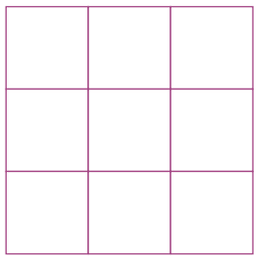
$\frac{1}{2}$

(c)



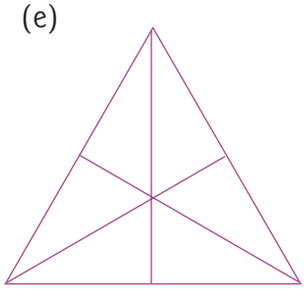
$\frac{3}{8}$

(d)



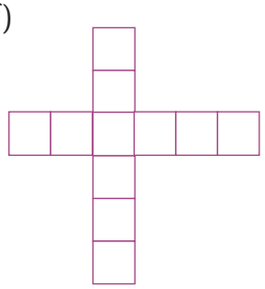
$\frac{4}{9}$

(e)



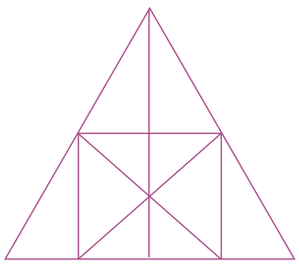
$\frac{3}{6}$

(f)



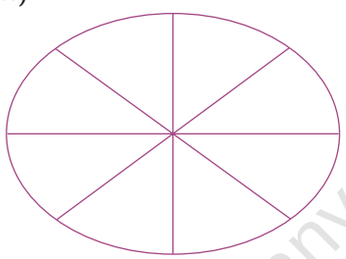
$\frac{6}{11}$

(g)



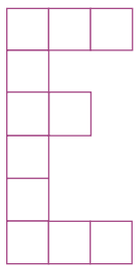
$\frac{4}{8}$

(h)



$\frac{3}{8}$

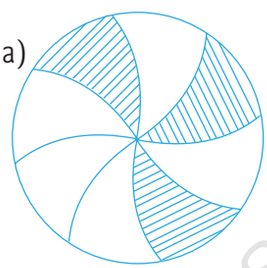
(i)



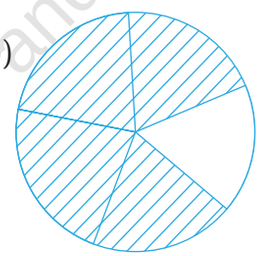
$\frac{5}{11}$

9. For each of the following figures write the fraction shown by the shaded parts.

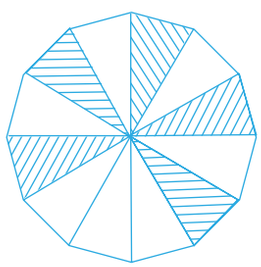
(a)



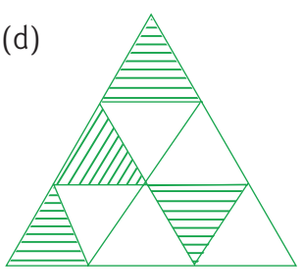
(b)



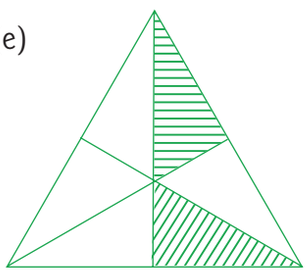
(c)



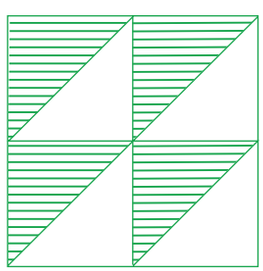
(d)



(e)

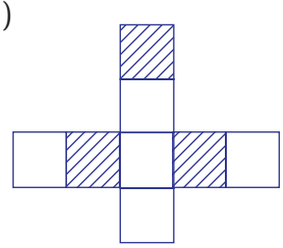


(f)

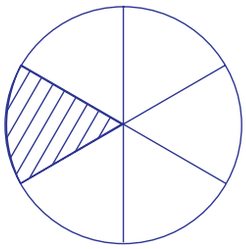


10. For each of the following write the fraction shown by the unshaded parts.

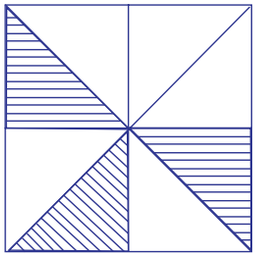
(a)



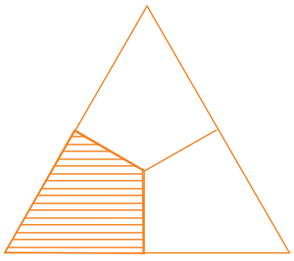
(b)



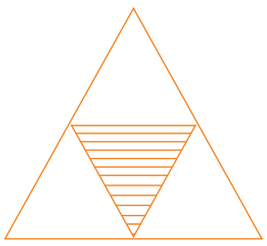
(c)



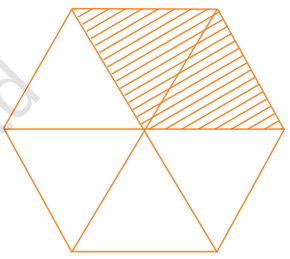
(d)



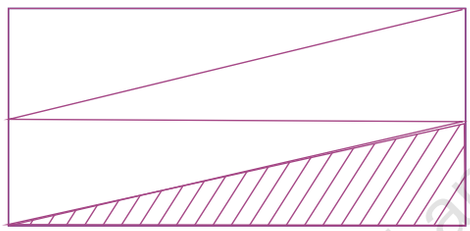
(e)



(f)



(g)



11. Write the fraction for each of the following fractional numbers. One has been done for you.

Fractional Number		Fraction	Fractional Number		Fraction
(a)	three-sevenths	$\frac{3}{7}$	(b)	one-fifth	
(c)	three-sixths		(d)	five-sixths	
(e)	one-eighth		(f)	seven-tenths	
(g)	six-ninths		(h)	nine-elevenths	
(i)	eight-twelfths		(j)	twelve-seventeenths	

12. Write the fractional number for each of the following fractions. One has been done for you.

Fraction		Fractional Number	Fraction		Fractional Number
(a)	$\frac{4}{8}$	four-eighths	(b)	$\frac{5}{7}$	.....
(c)	$\frac{1}{5}$	.....	(d)	$\frac{4}{6}$	.....
(e)	$\frac{7}{9}$	.....	(f)	$\frac{6}{11}$	.....
(g)	$\frac{8}{10}$	.....	(h)	$\frac{9}{12}$	.....
(i)	$\frac{2}{3}$	.....	(j)	$\frac{7}{16}$	.....

Numerator and Denominator of a Fraction

A fraction is written with two numerals arranged one over the other and separated by a line. The numeral above the line is called the numerator and the numeral below the line is called the denominator of the fraction.

In $\frac{2}{3}$, we have numerator = 2, denominator = 3.

In $\frac{4}{7}$, we have numerator = 4, denominator = 7.

In $\frac{1}{8}$, we have numerator = 1, denominator = 8.

Exercise 40

1. Write the numerator and denominator of each of the following fractions.

	Fraction	Numerator	Denominator		Fraction	Numerator	Denominator
(a)	$\frac{1}{7}$			(b)	$\frac{3}{11}$		
(c)	$\frac{2}{9}$			(d)	$\frac{7}{10}$		
(e)	$\frac{11}{24}$			(f)	$\frac{8}{13}$		
(g)	$\frac{17}{35}$			(h)	$\frac{10}{30}$		
(i)	$\frac{7}{23}$			(j)	$\frac{22}{41}$		

2. Write the fractions in which:

(a) Numerator = 7, Denominator = 12

(b) Numerator = 5, Denominator = 8

(c) Numerator = 4, Denominator = 5

(d) Denominator = 7, Numerator = 2

(e) Numerator = 3, Denominator = 6

(f) Denominator = 10, Numerator = 9

(g) Denominator = 15, Numerator = 7

(h) Denominator = 25, Numerator = 14

3. Fill in the blanks.

(a) In $\frac{10}{17}$, the ..... is 17.

(b) In $\frac{8}{15}$, the ..... is 8.

(c) In $\frac{14}{19}$, the numerator is ..... .

(d) In $\frac{17}{23}$, the denominator is ..... .

(e) In $\frac{16}{21}$, the ..... is 16 and the ..... is 21.

Fractional Part of a Collection or Group

As we have studied earlier,

$\frac{1}{2}$ means '1 part out of 2 equal parts';

$\frac{1}{3}$ means '1 part out of 3 equal parts';

$\frac{1}{4}$ means '1 part out of 4 equal parts';

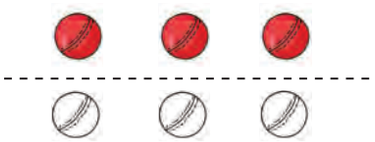
$\frac{2}{5}$ means '2 parts out of 5 equal parts';

and so on.

The above fact can be used to shade or find the fractional part of a collection or group of objects.

Let us find and shade $\frac{1}{2}$ of a collection of 6 balls.

We divide the collection into two equal parts by a line as shown.



We now shade the balls in one part.

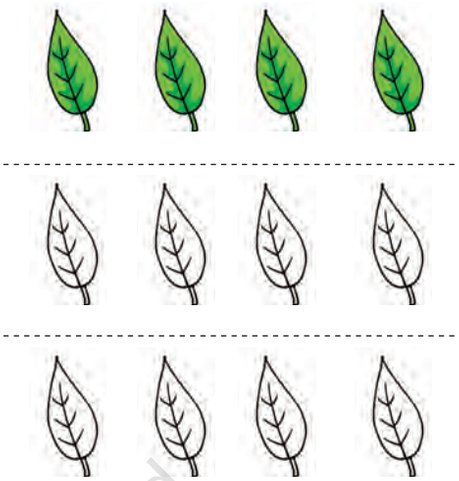
The shaded part represents $\frac{1}{2}$ of the collection. Clearly, $\frac{1}{2}$ of 6 balls = 3 balls.

Thus, $\frac{1}{2}$ of 6 = 3.

Also, 6 ÷ 2 = 3.

So, to find $\frac{1}{2}$ of a collection, we divide by 2.

Let us now find and shade $\frac{1}{3}$ of a collection of 12 leaves.



We divide the collection into 3 equal parts by drawing lines as shown.

We now shade the leaves in one part.

The shaded part represents $\frac{1}{3}$ of the collection.

Clearly, $\frac{1}{3}$ of 12 leaves = 4 leaves.

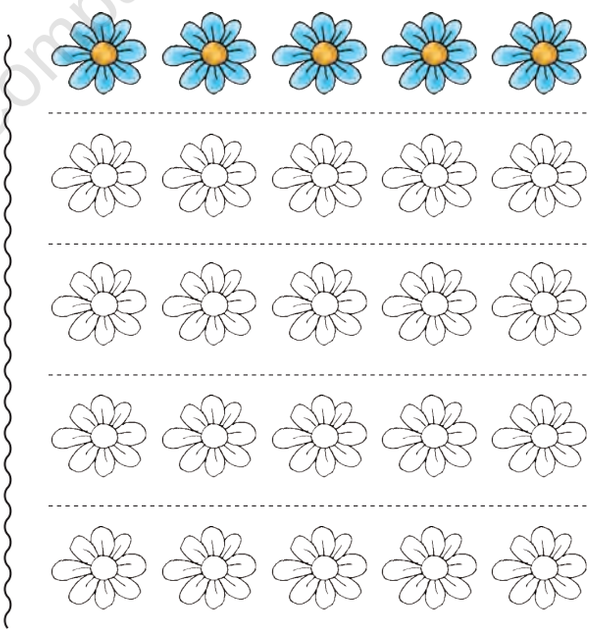
Thus, $\frac{1}{3}$ of 12 = 4.

Also, 12 ÷ 3 = 4.

So, to find $\frac{1}{3}$ of a collection, we divide by 3.

Similarly, we may find $\frac{1}{4}$ or $\frac{1}{5}$ of a given collection as shown:

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



$\frac{1}{5}$ of 25 = 5

Thus, to find $\frac{1}{4}$ of a collection, we divide by 4; to find $\frac{1}{5}$ of a collection, we divide by 5; and so on.

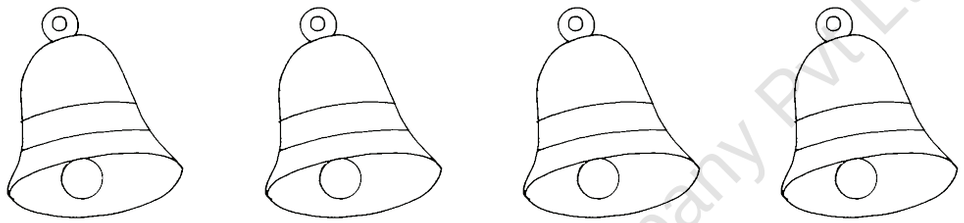
Exercise 41

1. Colour to show the fraction.

(a)

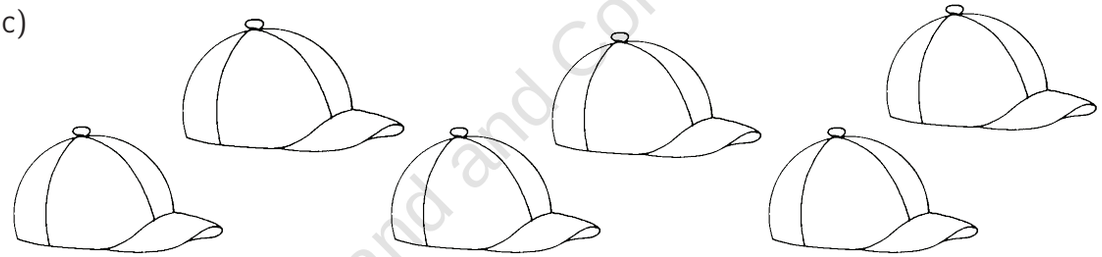
$\frac{2}{3}$

(b)



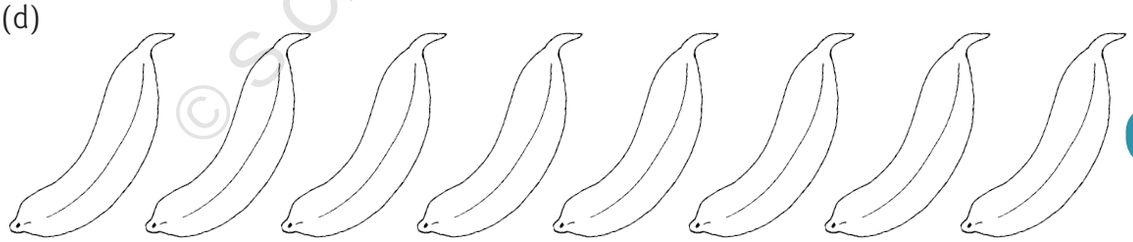
$\frac{3}{4}$

(c)



$\frac{1}{3}$

(d)



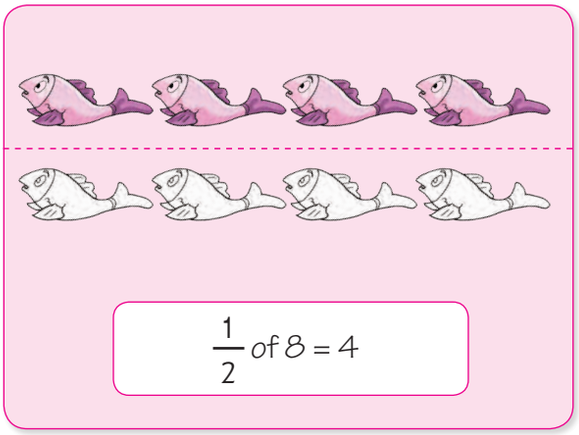
$\frac{1}{4}$

(e)

$\frac{1}{2}$

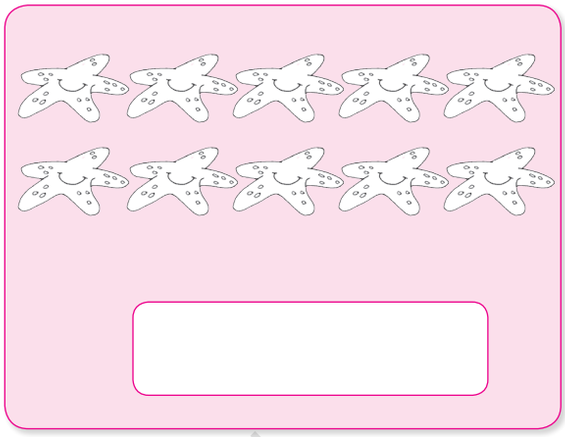
2. Shade one-half of the collection and write the result as shown.

(a)

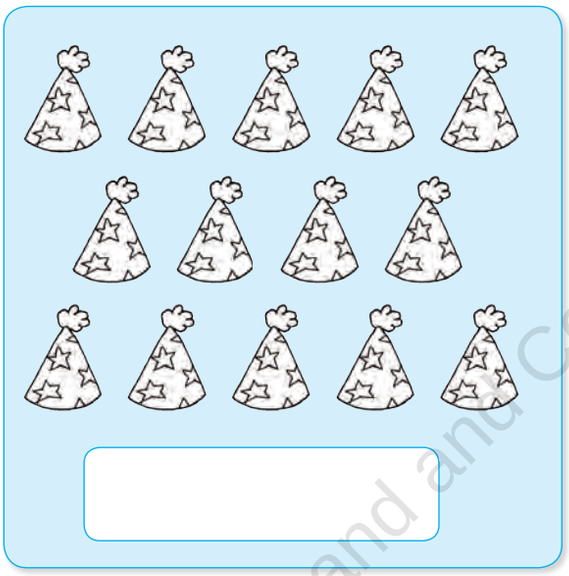


$\frac{1}{2}$ of 8 = 4

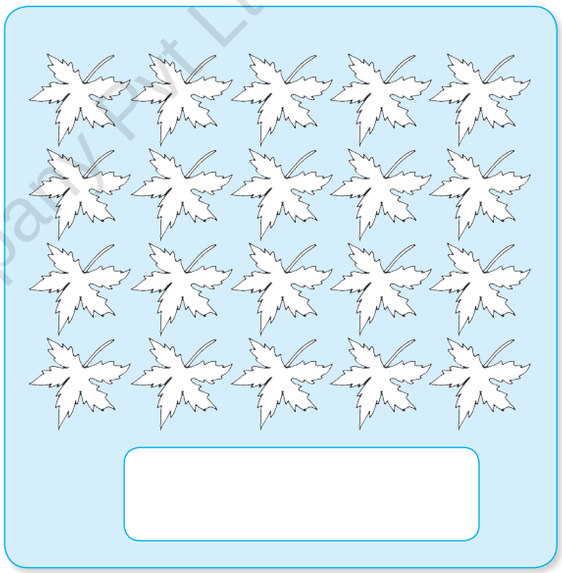
(b)



(c)

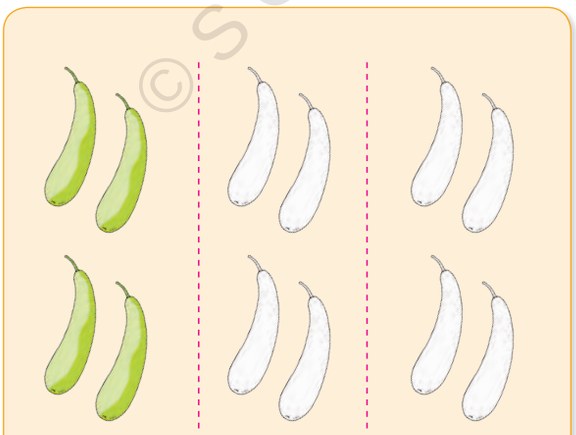


(d)



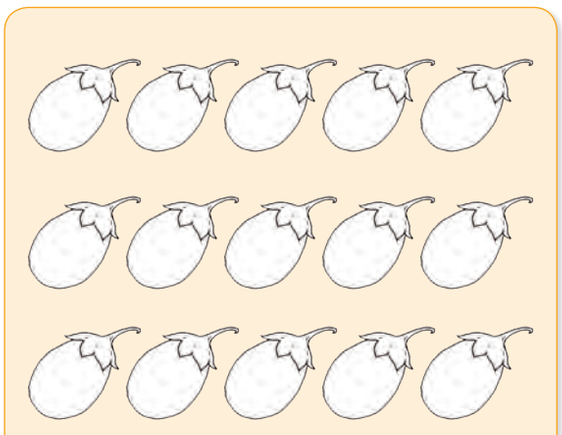
3. Shade one-third of the collection and write the result as shown. One has been done for you.

(a)

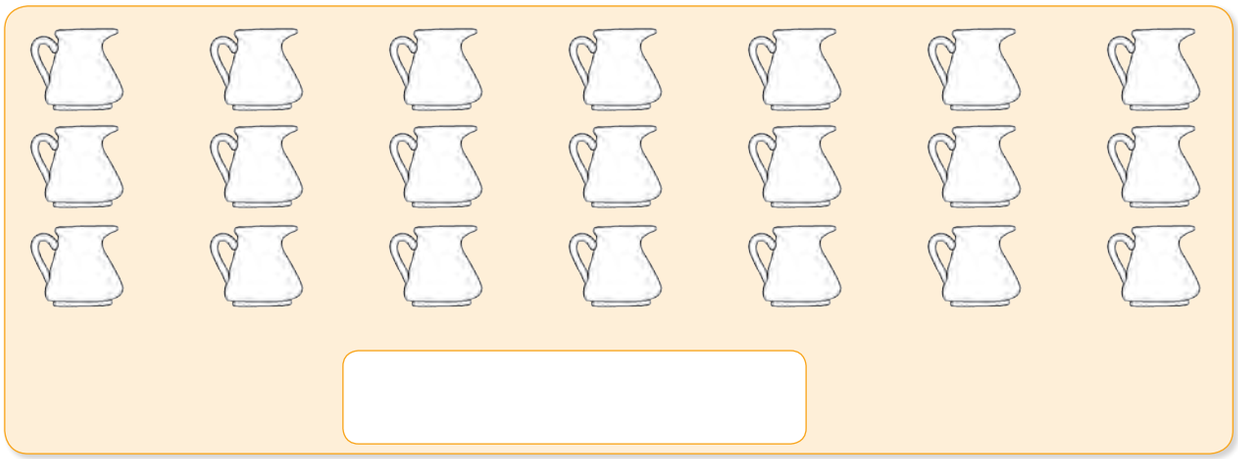


$\frac{1}{3}$ of 12 = 4

(b)

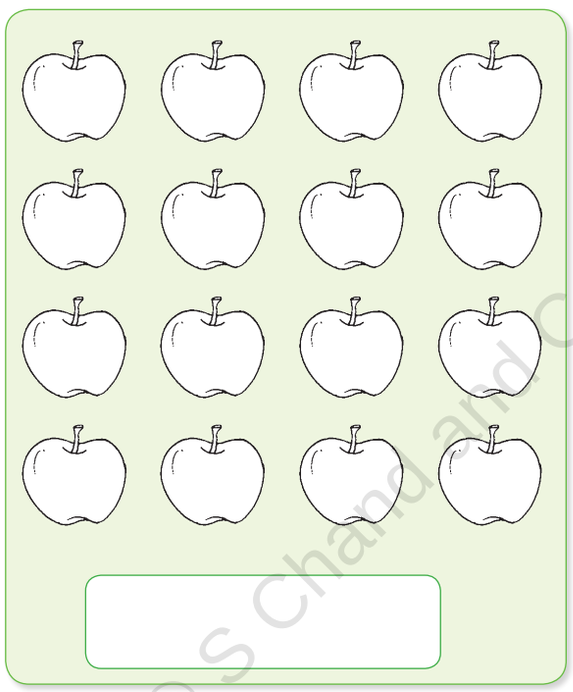


(c)

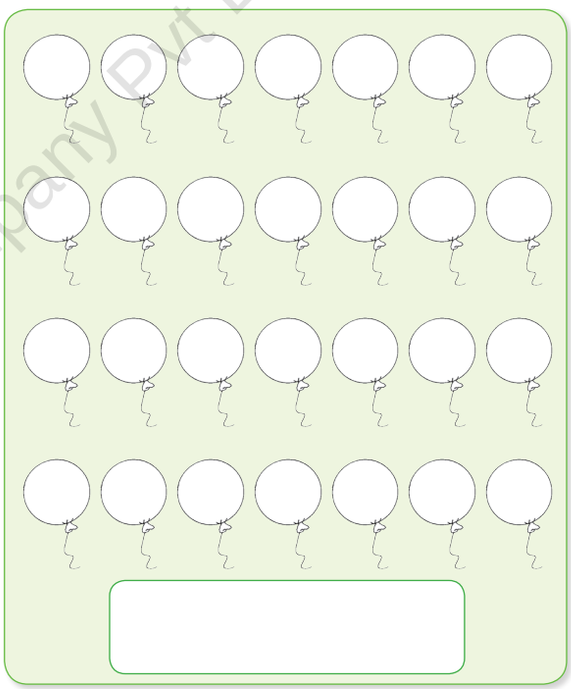


4. Shade one-fourth of the collection and write the result.

(a)



(b)



5. Solve:

(a) $\frac{1}{2}$ of 22 = ☐ (b) $\frac{1}{3}$ of 18 = ☐ (c) $\frac{1}{4}$ of 36 = ☐

(d) $\frac{1}{3}$ of 27 = ☐ (e) $\frac{1}{2}$ of 28 = ☐ (f) $\frac{1}{4}$ of 56 = ☐

(g) $\frac{1}{5}$ of 20 = ☐ (h) $\frac{1}{5}$ of 45 = ☐

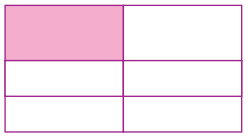
Assessment 8

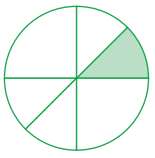
QUESTION BAG 1

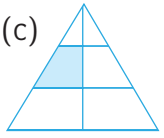
(Objective Type Questions)

Tick (✓) the correct answer.

1. Which figure shows $\frac{1}{6}$ shaded?

(a)  ☐

(b)  ☐

(c)  ☐

(d)  ☐

2. What fraction of the candles on the cake is lit?

(a) $\frac{1}{4}$ ☐ (b) $\frac{3}{7}$ ☐ (c) $\frac{4}{7}$ ☐ (d) $\frac{4}{3}$ ☐

3. The figure shown alongside is shaded to show which fraction?

(a) $\frac{1}{4}$ ☐ (b) $\frac{1}{3}$ ☐ (c) $\frac{2}{3}$ ☐ (d) $\frac{3}{4}$ ☐

4. What is the fraction of each colour in a rainbow?

(a) $\frac{1}{6}$ ☐ (b) $\frac{2}{5}$ ☐ (c) $\frac{1}{7}$ ☐ (d) $\frac{2}{7}$ ☐

5. How many quarters will make a whole?

(a) 2 ☐ (b) 3 ☐ (c) 4 ☐ (d) 6 ☐

6. In a bouquet, there are 4 red flowers, 6 yellow flowers and 3 white flowers. What fraction of the bouquet is red-coloured?

(a) $\frac{4}{9}$ ☐ (b) $\frac{4}{13}$ ☐ (c) $\frac{4}{10}$ ☐ (d) $\frac{6}{13}$ ☐

7. The numerator of the fraction $\frac{13}{16}$ is

(a) 13 ☐ (b) 16 ☐ (c) 3 ☐ (d) 6 ☐

8. What fraction of our National Flag is white?

(a) $\frac{1}{3}$ ☐ (b) $\frac{2}{3}$ ☐ (c) $\frac{1}{2}$ ☐ (d) $\frac{3}{2}$ ☐

9. Shaloo invited 7 girls to her birthday party. Only 3 girls came. What fraction of the girls did not attend the party?

(a) $\frac{3}{4}$ ☐ (b) $\frac{4}{3}$ ☐ (c) $\frac{3}{7}$ ☐ (d) $\frac{4}{7}$ ☐

10. I have done one-third of my homework. What fraction is left to be done?

(a) $\frac{1}{3}$ ☐ (b) $\frac{1}{2}$ ☐ (c) $\frac{2}{3}$ ☐ (d) None of these ☐

11. In the word ADDITION, which fraction is represented by the letter 'D'?

(a) $\frac{1}{8}$ ☐ (b) $\frac{2}{7}$ ☐ (c) $\frac{2}{8}$ ☐ (d) $\frac{3}{8}$ ☐

12. What is the fraction of even numbers in the given table?

74	81	13	16
22	100	90	99
10	88	27	5

(a) $\frac{6}{12}$ ☐ (b) $\frac{5}{12}$ ☐ (c) $\frac{7}{9}$ ☐ (d) $\frac{7}{12}$ ☐

13. How many beads will make half of 10 beads?

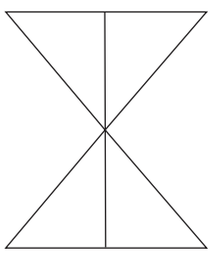
(a) 4 ☐ (b) 5 ☐ (c) 6 ☐ (d) 8 ☐

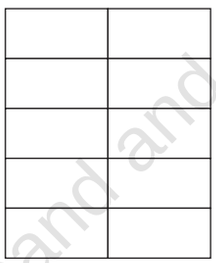
14. How many flowers will make one-fourth of 20 flowers?

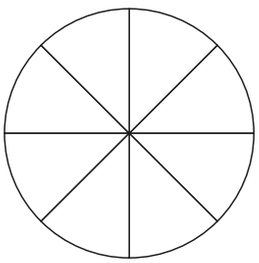
(a) 4 ☐ (b) 5 ☐ (c) 8 ☐ (d) 10 ☐

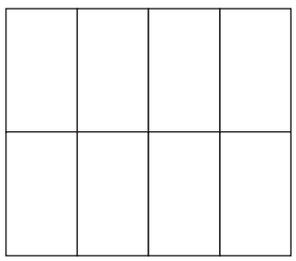
QUESTION BAG 2

1. Shade each figure to show the given fraction.

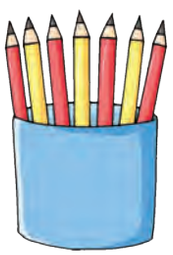
(a)  $\frac{1}{2}$

(b)  $\frac{1}{5}$

(c)  $\frac{3}{8}$

(d)  $\frac{3}{4}$

2. Fill in the blanks.



(a) There are ..... one-tenth in a whole.

(b) There are ..... one-seventh in a whole.

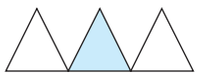
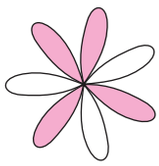
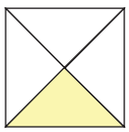
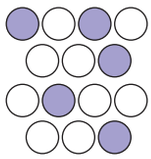
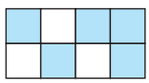
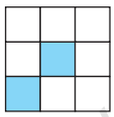
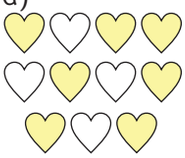
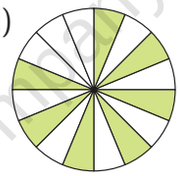
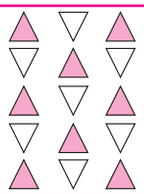
(c) There are ..... one-fifth in a whole.

(d) In $\frac{7}{8}$, 7 is the ..... and 8 is the ..... .

(e) There are ..... quarters in a whole.

(f) In a fraction ..... tells us the total parts a figure is made of and ..... tells us the number of parts taken.

3. Complete the following table.

S. No.	Fraction shaded	Fraction unshaded	S. No.	Fraction shaded	Fraction unshaded
(a) 			(f) 		
(b) 			(g) 		
(c) 			(h) 		
(d) 			(i) 		
(e) 			(j) 		

4. If in each of the following questions, all the addends are the same, fill in the boxes.

(a) ☐ + ☐ = 1

(b) ☐ + ☐ + ☐ = 1

(c) ☐ + ☐ + ☐ + ☐ = 1

(d) ☐ + ☐ + ☐ + ☐ + ☐ = 1

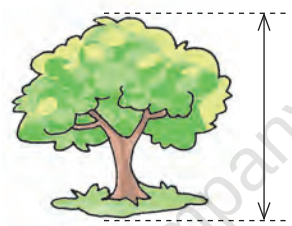
11 Measurement of Length

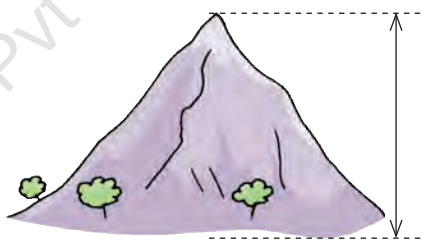
We have come across the concept of length in Class 2. In our everyday life, we measure the lengths of various objects such as a piece of cloth, a bamboo, a pencil, a pole, etc.

Length of an object tells us how long an object is.

The concept of measurement of length finds great use in measuring:

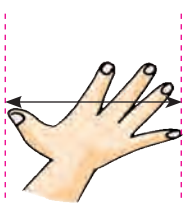
1. lengths of objects like pipe, rope, cloth etc.
2. heights of persons or vertical objects like a pole, a tower, a mountain etc.
3. distance between two places.



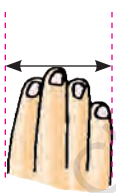


Need for Standard Unit to Measure Length

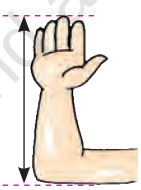
In olden days, people used to measure smaller lengths in terms of digit or finger-width, bigger lengths in terms of handspan, cubit or arm length and distances in terms of steps or paces.



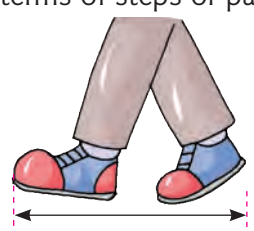
Handspan



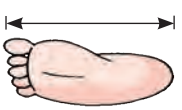
Finger-width



Cubit



Pace



Foot

Digit

But these units were not uniform or accurate, as the arm length or the step length differed from person to person.

So, to be more precise, some standard units were defined and devices were invented.

Measures of Length

1. **Metre:** The standard unit of length is metre.
   Length of a wall, height of a pole, length of cloth etc. are measured in metres.
   We denote 'metres' by m.
2. **Centimetre:** The smaller unit of length is centimetre.
   Small lengths such as lengths of line segments, length of a pencil, length and breadth of paper etc. are measured in centimetres.
   We denote 'centimetres' by cm.

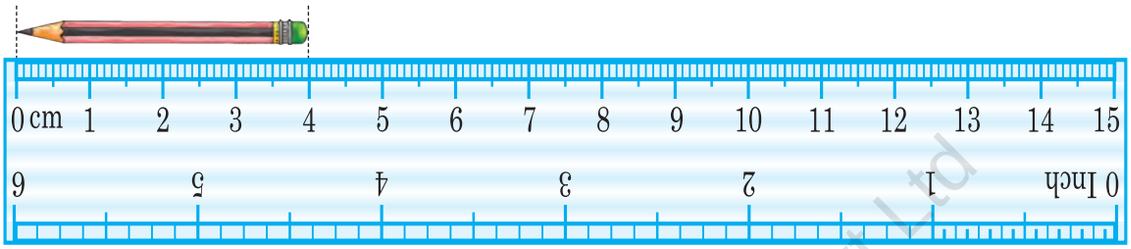
3. **Kilometre:** The bigger unit of length is kilometre.

Large lengths such as distance between two cities are measured in kilometres.

We denote 'kilometres' by 'km'.

Devices to Measure Length

We measure the length of an object by a metre scale or ruler. To measure the length of an object using a ruler, we place the object alongside the ruler, with one end of the object at the zero mark of the ruler, as shown below.

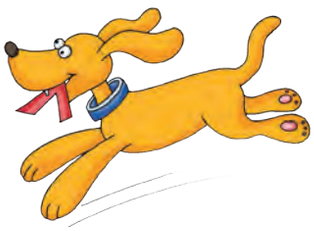


Then, we take the reading at the other end of the object. This gives us the length of the object. Here, the length of the pencil is 4 cm.

Exercise 42

Circle the suitable unit to measure each of the following.

1.	The length of your foot	m	cm	km
2.	The height of your father	m	cm	km
3.	The length of a book	m	cm	km
4.	Distance from school to home	m	cm	km
5.	The length of a chocolate bar	m	cm	km
6.	The height of a building	m	cm	km
7.	The length of a swimming pool	m	cm	km
8.	The length of a river	m	cm	km



Relation between Units of Length

1 km = 1000 m

1 m = 100 cm

Conversion of Metres into Centimetres and Vice Versa

We know that 1m = 100 cm.

Rule 1: To convert metres into centimetres, multiply the number of metres by 100.

Thus,

7 m = (7 × 100) cm = 700 cm; 9 m = (9 × 100) cm = 900 cm, etc.

Rule 2: To convert metres and centimetres into centimetres, we multiply the number of metres by 100 and add to it the number of centimetres.

Thus, 8 m 63 cm = 8 m + 63 cm
= (8 × 100) cm + 63 cm
= 800 cm + 63 cm
= 863 cm.

Solved Examples

Example 1: Convert the following lengths into centimetres.

(a) 12 m (b) 7 m 54 cm (c) 13 m 8 cm

Solution: We have:

(a) 12 m = (12 × 100) cm
= 1200 cm.

(b) 7 m 54 cm = (7 × 100) cm + 54 cm
= 700 cm + 54 cm
= 754 cm.

(c) 13 m 8 cm = (13 × 100) cm + 8 cm
= 1300 cm + 8 cm
= 1308 cm.

Example 2: Convert the following lengths into metres and centimetres.

(a) 765 cm (b) 609 cm (c) 3974 cm

Solution: We have:

(a) 765 cm = 700 cm + 65 cm
= 7 m + 65 cm
= 7 m 65 cm.

(b) 609 cm = 600 cm + 9 cm
= 6 m + 9 cm
= 6 m 9 cm.

(c) 3974 cm = 3900 cm + 74 cm
= 39 m + 74 cm
= 39 m 74 cm.

Conversion of Kilometres into Metres and Vice Versa

We know that : 1 km = 1000 m.

Rule 1: To convert kilometres into metres, multiply the number of kilometres by 1000.

Thus, 5 km = (5 × 1000) m = 5000 m.

Rule 2: To convert kilometres and metres into metres, we multiply the number of kilometres by 1000 and add it to the number of metres.

Thus, 9 km 375 m = 9 km + 375 m
= (9 × 1000) m + 375 m
= 9000 m + 375 m = 9375 m.

Example 3: Convert the following lengths into metres.

(a) 4 km (b) 2 km 285 m (c) 6 km 55 m

Solution: We have:

(a) 4 km = (4 × 1000) m = 4000 m.

(b) 2 km 285 m = 2 km + 285 m
= (2 × 1000) m + 285 m
= 2000 m + 285 m = 2285 m.

(c) 6 km 55 m = 6 km + 55 m
= (6 × 1000) m + 55 m
= 6000 m + 55 m = 6055 m.

Example 4: Convert the following lengths into kilometres and metres.

(a) 6002 m (b) 5596 m

Solution: We have:

(a) 6002 m = 6000 m + 2 m
= 6 km + 2 m
= 6 km 2 m.

(b) 5596 m = 5000 m + 596 m
= 5 km + 596 m
= 5 km 596 m.

Exercise 43

1. Convert the following into centimetres.

(a) 3 m (b) 6 m (c) 10 m (d) 13 m

(e) 16 m (f) 31 m (g) 64 m (h) 89 m

2. Convert the following into centimetres.

(a) 2 m 83 cm (b) 4 m 70 cm (c) 1 m 87 cm (d) 8 m 5 cm (e) 10 m 10 cm

(f) 15 m 6 cm (g) 63 m 42 cm (h) 74 m 4 cm (i) 90 m 88 cm

3. Convert the following into metres and centimetres.

(a) 400 cm (b) 1600 cm (c) 345 cm (d) 605 cm

(e) 519 cm (f) 1307 cm (g) 5410 cm (h) 6501 cm

4. Convert the following into metres.

(a) 7 km (b) 9 km (c) 3 km 330 m (d) 5 km 55 m (e) 2 km 5 m

5. Convert the following into 'kilometres and metres'.

(a) 4000 m (b) 1756 m (c) 2300 m (d) 6006 m (e) 7070 m

Addition of Lengths

Addition of lengths given in metres (m) and centimetres (cm)

We arrange the given lengths in two columns of m and cm and then add them separately.

Here, we shall write cm as 2-digit numbers.

Thus, we write 5 cm as 05 cm.

Solved Examples

Example 1: Add 18 m 25 cm and 23 m 7 cm.

Solution: Arranging the given lengths in two columns of m and cm, we get:

	m		cm	
		(1)	(1)	
	1	8	2	5
+	2	3	0	7
	4	1	3	2

Step 1. Adding centimetres.

25 cm + 07 cm = 32 cm.

Write 32 under cm column.

Step 2. Adding metres.

18 m + 23 m = 41 m.

Write 41 under m column.

$\therefore$ Sum = 41 m 32 cm.

Example 2: Add 39 m 75 cm and 46 m 38 cm.

Solution : Arranging the given lengths in two columns of m and cm, we get:

	m		cm	
	(1)	(1)	(1)	
	3	9	7	5
+	4	6	3	8
	8	6	1	3

Step 1. Adding centimetres.

75 cm + 38 cm = 113 cm

= 100 cm + 13 cm

= 1 m + 13 cm.

Write 13 under cm column and carry over 1 to m column.

Step 2. Adding metres.

1 m (carried over) + 39 m + 46 m = 86 m.

Write 86 under m column.

∴ Sum = 86 m 13 cm.

Addition of lengths given in kilometres (km) and metres (m)

We arrange the given lengths in two columns of km and m and then add them separately.

Here, we shall write number of metres as 3-digit numbers.

Example 3: Add 3 km 287 m and 4 km 56 m.

Solution: Arranging the given lengths in two columns of km and m, we get:

	km		m	
		(1)	(1)	
	3	2	8	7
+	4	0	5	6
	7	3	4	3

Step 1. Adding metres.

287 m + 056 m = 343 m.

Write 343 under m column.

Step 2. Adding kilometres.

3 km + 4 km = 7 km.

Write 7 under km column.

∴ Sum = 7 km 343 m.

Example 4: Add 18 km 787 m and 26 km 349 m.

Solution: Arranging the given lengths in two columns of km and m, we get:

	km		m		
	(1)	(1)	(1)	(1)	
	1	8	7	8	7
+	2	6	3	4	9
	4	5	1	3	6

Step 1. Adding metres.

787 m + 349 m = 1136 m

= 1000 m + 136 m

= 1 km + 136 m.

Write 136 under m column and carry over 1 to km column.

Step 2. Adding kilometres.

1 km (carried over) + 18 km + 26 km = 45 km.

Write 45 under km column.

∴ Sum = 45 km 136 m.

Exercise 44

Add:

1.

	m	cm
	3 9	0 8
+	4 3	0 6

2.

	m	cm
	6 8	2 5
+	3 6	7 0

3.

	m	cm
	4 3	6 2
+	2 7	3 4

4.

	m	cm
	9 3	7 5
+	2 9	2 5

5.

	m	cm
	7 4	5 0
+	5 8	7 0

6.

	m	cm
	4 7	8 4
+	6	5 8

7.

	m	cm
	8 8	9 0
	5 7	6 0
+	1 6 4	8 0

8.

	m	cm
1	3 6	4 5
	4 9	6 5
+	1 7	9 0

9.

	m	cm
	1 8 9	7 5
	2 3 8	8 5
+	4 2 6	6 8

Arrange in columns and add.

10. 93 m 76 cm and 67 m 34 cm

11. 105 m 96 cm and 9 m 9 cm

12. 16 m 53 cm, 2 m 87 cm and 118 m 45 cm

13. 9 m 64 cm, 17 m 56 cm, 4 m 5 cm and 24 m 20 cm

14. 87 m 60 cm, 64 m 80 cm, 29 m 40 cm and 85 cm

Add the following.

15.

	km		m	
	6	0	6	6
+	7	0	8	7

16.

	km		m		
	1	8	2	6	7
+	2	8	4	8	9

17.

	km		m		
	4	7	7	4	7
+	7	4	1	7	7

18.

	km		m	
	9	7	5	6
+	8	6	7	5

19.

	km		m		
	1	6	9	8	4
+	2	9	0	9	8

20.

	km		m		
	7	5	5	7	5
+	4	6	6	5	8

Arrange in columns and add.

21. 24 km 758 m and 38 km 66 m

22. 54 km 54 m and 136 km 288 m

23. 18 km 485 m, 22 km 456 m and 25 km 525 m

24. 9 km 89 m, 13 km 187 m and 36 km 888 m

Subtraction of Lengths

Subtraction of lengths given in metres (m) and centimetres (cm)

We arrange the given lengths in two columns of m and cm and then subtract separately.

We write the number of cm as 2-digit numbers.

Solved Examples

Example 1: Subtract 24 m 45 cm from 69 m 80 cm.

Solution: Arranging the given lengths in two columns of m and cm, we get:

	m		cm	
			(7)	(10)
	6	9	~~8~~	~~0~~
–	2	4	4	5
	4	5	3	5

Step 1. **Subtracting centimetres.**
80 cm – 45 cm = 35 cm.
Write 35 under cm column.

Step 2. **Subtracting metres.**
69 m – 24 m = 45 m.
Write 45 under m column.

∴ Difference = 45 m 35 cm.

Example 2: Subtract 39 m 87 cm from 63 m 50 cm.

Solution: Arranging the given lengths in two columns of m and cm, we get:

	m		cm	
	(5)	(12) ~~2~~	(14) ~~4~~	(10)
	~~6~~	~~3~~	~~5~~	~~0~~
–	3	9	8	7
	2	3	6	3

Step 1. **Subtracting centimetres.**
Since 87 > 50, we cannot subtract 87 cm from 50 cm.
So, we borrow 1 m, leaving behind 62 m.
Now, 1 m + 50 cm = 100 cm + 50 cm = 150 cm.
∴ 150 cm – 87 cm = 63 cm.
Write 63 under cm column.

Step 2. **Subtracting metres.**
62 m – 39 m = 23 m.
Write 23 under m column.

∴ Difference = 23 m 63 cm.

Example 3: Subtract 16 m 76 cm from 30 m 5 cm.

Solution: Arranging the given lengths in two columns of m and cm, we get :

	m		cm	
	(2)	(9) ~~10~~	(9) ~~10~~	(15)
	~~3~~	~~0~~	~~0~~	5
–	1	6	7	6
	1	3	2	9

Step 1. **Subtracting centimetres.**
Since 76 > 5, we cannot subtract 76 from 5.
So, we borrow 1 m, leaving behind 29 m.
Now, 1 m + 05 cm = 100 cm + 5 cm = 105 cm.
∴ 105 cm – 76 cm = 29 cm.
Write 29 under cm column.

Step 2. **Subtracting metres.**
29 m – 16 m = 13 m.
Write 13 under m column.

∴ Difference = 13 m 29 cm.

Subtraction of lengths given in kilometres (km) and metres (m)

We arrange the given lengths in two columns of km and m and then subtract them separately. We write the number of metres as 3-digit numbers.

Example 4: Subtract 36 km 265 m from 63 km 562 m.

Solution: Arranging the given lengths in two columns of km and m, we get:

	km		m		
				(15)	
	(5)	(13)	(4)	5	(12)
	6	3	5	6	2
–	3	6	2	6	5
	2	7	2	9	7

Step 1. **Subtracting metres.**
562 m – 265 m = 297 m.
Write 297 under m column.

Step 2. **Subtracting km.**
63 km – 36 km = 27 km.
Write 27 under km column.

∴ Difference = 27 km 297 m.

Example 5: Subtract 28 km 475 m from 52 km 100 m.

Solution: Arranging the given lengths in two columns of km and m, we get:

	km		m		
		(11)	(10)	(9)	
	(4)	1	0	10	(10)
	5	2	1	0	0
–	2	8	4	7	5
	2	3	6	2	5

Step 1. **Subtracting metres.**
As 475 > 100, we cannot subtract 475 m from 100 m.
So, we borrow 1 km, leaving behind 51 km.
Now, 1 km + 100 m = 1000 m + 100 m = 1100 m.
∴ 1100 m – 475 m = 625 m.
Write 625 under m column.

Step 2. **Subtracting km.**
51 km – 28 km = 23 km.
Write 23 under km column.

∴ Difference = 23 km 625 m.

Example 6: Subtract 57 km 488 m from 100 km 60 m.

Solution: Arranging the given lengths in two columns of km and m, we get:

	km		m		
	(9)	(9)	(9)	(15)	
	(0)	10	10	10	5	(10)
	1	0	0	0	6	0
–		5	7	4	8	8
		4	2	5	7	2

Step 1. **Subtracting metres.**
As 488 > 60, we cannot subtract 488 m from 60 m.
So, we borrow 1 km, leaving behind 99 km.
Now, 1 km + 60 m = 1000 m + 60 m = 1060 m.
∴ 1060 m – 488 m = 572 m.
Write 572 under m column.

Step 2. **Subtracting km.**
99 km – 57 km = 42 km.
Write 42 under km column.

∴ Difference = 42 km 572 m.

Exercise 45

Subtract:

1.

	m		cm	
	2	8	5	4
–	1	9	3	6

2.

	m		cm	
	4	3	6	0
–	2	6	4	5

3.

	m		cm	
	5	0	6	4
–	3	7	8	8

4.

	m		cm	
	6	4	2	0
–	3	5	2	6

5.

	m		cm	
	7	3	0	0
–	5	7	3	8

6.

	m		cm	
	8	1	0	5
–	4	3	8	6

7.

	m		cm	
	4	0	1	3
–		9	4	5

8.

	m			cm	
	1	0	4	7	2
–		6	9	8	5

Find the difference between:

9. 40 m and 6 m 38 cm

10. 9 m 30 cm and 4 m 85 cm

11. 8 m 72 cm and 20 m

12. 11 m 5 cm and 3 m 8 cm

13. 23 m 8 cm and 9 m 69 cm

14. 31 m and 9 m 86 cm

Subtract:

15.

	km		m		
	6	4	7	5	0
–	4	6	3	8	5

16.

	km			m		
	1	0	0	6	1	5
–			3	7	2	8

17.

	km		m		
	8	2	1	5	0
–	3	5	4	7	5

18.

	km			m		
	1	1	0	4	6	0
–			3	3	7	8	6

Find the difference between:

19. 62 km 455 m and 34 km 296 m

20. 56 km 841 m and 19 km 363 m

21. 102 km 100 m and 48 km 250 m

22. 73 km 175 m and 37 km 289 m

Word Problems

Example 1: A tailor needs 1 m 35 cm of cloth for trousers and 2 m 75 cm for a coat. What total length of cloth does he need?

Solution:

		m	cm
Length of cloth needed for trousers	=	1	3 5
Length of cloth needed for coat	=	+ 2	7 5
Total length of cloth needed	=	4	1 0

Hence, total length of cloth needed by tailor is 4 m 10 cm.

Example 2: Richard is 97 cm tall. His father is 1 m 56 cm tall. How much taller than the son is the father?

Solution:

		m	cm
Height of father	=	1	5 6
Height of Richard	=	− 0	9 7
Difference between heights	=		5 9

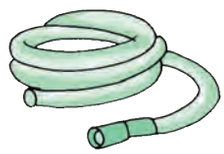
Hence, Richard's father is 59 cm taller than Richard.

Example 3: From a roll of plastic pipe of length 23 metres, two lengths measuring 10 m 37 cm and 8 m 8 cm are cut off. How much pipe is left on the roll?

Solution:

		m	cm
Length of first piece	=	1 0	3 7
Length of second piece	=	+	8 0 8
Total length cut	=	1	8 4 5
Length of the roll	=	2	3 0 0
Length of the pipe cut	=	− 1	8 4 5
Length of the pipe left	=		4 5 5

Hence, the length of the pipe left on the roll is 4 m 55 cm.



Example 4: Mona's office is 13 km away from her home. She covers 10 km 725 m of this distance by bus and the rest on foot. How much distance does she cover on foot?

Solution:

		km	m
Total distance to be covered	=	1	3 0 0 0
Distance covered by bus	=	− 1	0 7 2 5
Distance covered on foot	=		2 2 7 5

Hence, the distance covered by Mona on foot is 2 km 275 m.

Exercise 46

1. A rope is cut into two pieces of lengths 5 m 36 cm and 4 m 79 cm respectively. What was the original length of the rope?

2. Shanu purchased three pieces of ribbon measuring 1 m 75 cm, 2 m 5 cm and 80 cm respectively. What length of ribbon did she purchase altogether?

3. A boy walks along the sides of a park. The lengths of these sides are 108 m, 189 m 76 cm and 235 m 38 cm. What is the total distance covered by the boy in one round of the park?

4. From a roll of electric wire 60 m long, a piece of length 25 m 5 cm is cut off. How much wire is left on the roll?

5. How much is 9 m 67 cm less than 20 metres?

6. How much does 30 m 5 cm exceed 20 m 78 cm?

7. A pole 8 m 75 cm long was put in a pond to measure its depth. If 4 m 88 cm of the pole remains outside water, what is the depth of the pond?

8. Kunal jumped 96 cm high and Gaurav jumped 1 m 5 cm high. Who jumped higher and by how much?

9. A tree was 7 m 10 cm high. The upper part of the tree is broken by the wind. If the remaining height of the tree is 4 m 78 cm, what length of the tree is broken by the wind?

10. David purchased a piece of cloth measuring 16 metres. Out of this cloth, he gave 2 m 35 cm for his shirt, 4 m 65 cm for his pants and 2 m 45 cm for his coat to the tailor. How much cloth is left with him?

11. A shopkeeper had a bale of cloth 65 metres long. He sold 18 m 75 cm to one customer, 16 m 45 cm to another customer and 9 m 85 cm to a third customer. What length of cloth did he sell in all? What length of cloth is left?

12. In summer vacations Rahul went to his home town. He travelled 85 km 475 m by train, 37 km 565 m by bus and 5 km 745 m by an autorickshaw. What is the total length of his journey?

13. One day Mr Ganeshan hired a taxi. He travelled 15 km 275 m from his residence to his office, 8 km 685 m from his office to his friend's house and 10 km 50 m from this place to his residence. What is the total distance travelled by him on taxi?

14. Punam had to cover 74 km 50 m to reach her home. After covering a distance of 68 km 75 m her car went out of order. How much distance is left to be covered?

Things to Remember

1. The standard unit of length is metre, denoted by m.

The smaller unit is centimetre (cm) and the bigger unit is kilometre (km).

2. 1 m = 100 cm.

1 km = 1000 m.

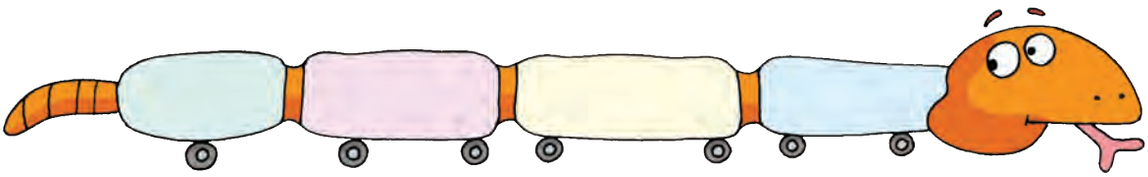
3. To convert metres into centimetres, we multiply the number of metres by 100.

4. To convert kilometres into metres, we multiply the number of kilometres by 1000.

5. To add or subtract lengths given in m and cm, we arrange the given lengths in two columns of m and cm and add or subtract them separately.

Here, we write cm as 2-digit numbers *i.e.,* 4 cm as 04 cm.

6. To add or subtract lengths given in km and m, we arrange the given lengths in two columns of km and m and add or subtract them separately. Here, we write m as 3-digit numbers *i.e.*, 8 m as 008 m and 60 m as 060 m.



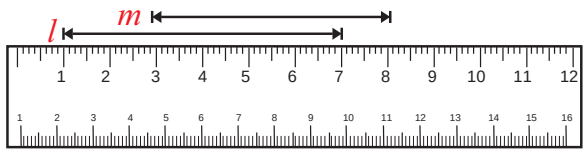
Assessment 9

QUESTION BAG 1

(Objective Type Questions)

Tick (✓) the correct answer.

1. By what measure is the line *l* longer than *m*?



(a) 1 cm ☐ (b) 2 cm ☐

(c) 3 cm ☐ (d) 4 cm ☐

2. 4 m 6 cm = ... cm.

(a) 460 ☐ (b) 4006 ☐ (c) 4060 ☐ (d) 406 ☐

3. Cloth merchants use a ..... to measure cloth.

(a) Ruler ☐ (b) Metre rod ☐ (c) Measuring tape ☐ (d) Scale ☐

4. Which of the following is a standard unit for measuring length?

(a) Pace ☐ (b) Metre ☐ (c) Cubit ☐ (d) Handspan ☐

5. 95 m 68 cm =

(a) 1018 cm ☐ (b) 9568 cm ☐ (c) 9685 cm ☐ (d) 1028 cm ☐

6. Two ropes are of lengths 6 m 75 cm and 4 m 25 cm respectively. What is their total length?

(a) 9 m ☐ (b) 10 m ☐ (c) 10 m 50 cm ☐ (d) 11 m ☐

7. The small scale that we commonly keep in our geometry box is marked from 0 to ..... cm.

(a) 10 ☐ (b) 12 ☐ (c) 15 ☐ (d) 20 ☐

8. Asha, Usha and Nisha each measured the length of their classroom using their own feet as measuring tools.

Asha reported a length that measured 34 of her feet;

Usha reported a length that measured 48 of her feet;

Nisha reported a length that measured 42 of her feet.

Which of the three students had the smallest feet?

(a) Asha ☐ (b) Usha ☐ (c) Nisha ☐ (d) Can't say ☐

9. A ribbon was cut into two pieces of length 2 m 65 cm each. What was the original length of the ribbon?

(a) 4 m 13 cm ☐ (b) 5 m 13 cm ☐ (c) 4 m 30 cm ☐ (d) 5 m 30 cm ☐

10. Joe walks 2 km 575 m to his school. What is the distance covered by him in going to and coming back from school?

(a) 4 km 950 m ☐ (b) 5 km ☐ (c) 5 km 150 m ☐ (d) 5 km 250 m ☐

11. Rod A is 5 m 9 cm long while Rod B is 8 m 6 cm long. B is longer than A by how much?

(a) 3 m 3 cm ☐ (b) 2 m 70 cm ☐ (c) 3 m 7 cm ☐ (d) 2 m 97 cm ☐

12. City X is 13 km 80 m from City Z while City Y is 7 km 150 m from City Z. City X is how much farther from City Z than City Y?

(a) 6 km 650 m ☐ (b) 5 km 930 m ☐ (c) 6 km 65 m ☐ (d) 5 km 650 m ☐

QUESTION BAG 2

1. Write the suitable unit (m, cm or km) to measure.

(a) the length of a tennis field ☐

(b) distance between Mussoorie and Dehradun ☐

(c) the length of your finger ☐

(d) the length of a car ☐

(e) the length of your classroom ☐

(f) the depth of a well ☐

2. Put the correct symbol >, < or = in the placeholder.

(a) 1 km 70 m ☐ 1170 m

(b) 8 km 880 m ☐ 8808 m

(c) 5 km 55 m ☐ 5055 m

(d) 10 m 50 cm ☐ 1150 cm

(e) 2 km 24 m ☐ 2240 m

(f) 8 m 90 cm ☐ 898 cm

12 Measurement of Weight

Mass and Weight

The quantity of matter in an object is called its mass.

In our daily life, we use the word 'weight' instead of 'mass'.

Thus, the weight of an object tells us how much of an object is there or how heavy an object is.

Units of Measuring Weights

The standard unit of weight is kilogram.

The smaller unit of weight is gram.

A still smaller unit of weight is milligram.

In short, we denote kilogram by kg, gram by g and milligram by mg.

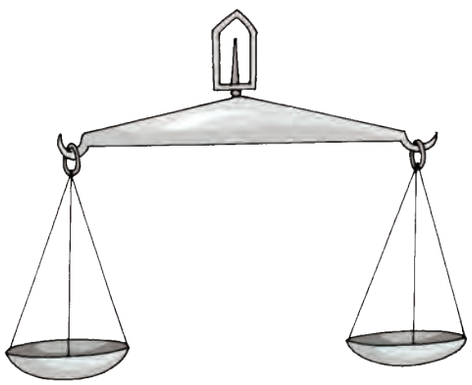
As we have studied earlier,

1. we use the unit milligram (mg) to measure very small quantities of things like medicine, gold etc.
2. we use the unit gram (g) to measure light weights such as one or two apples, a book, some spices etc.
3. we use the unit kilogram (kg) to measure heavy weights such as a man, a bag of wheat or sugar, a bag of fruits or vegetables etc.

The relation between kilogram and gram is given by:

1 kg = 1000 g

Devices to Measure Weight

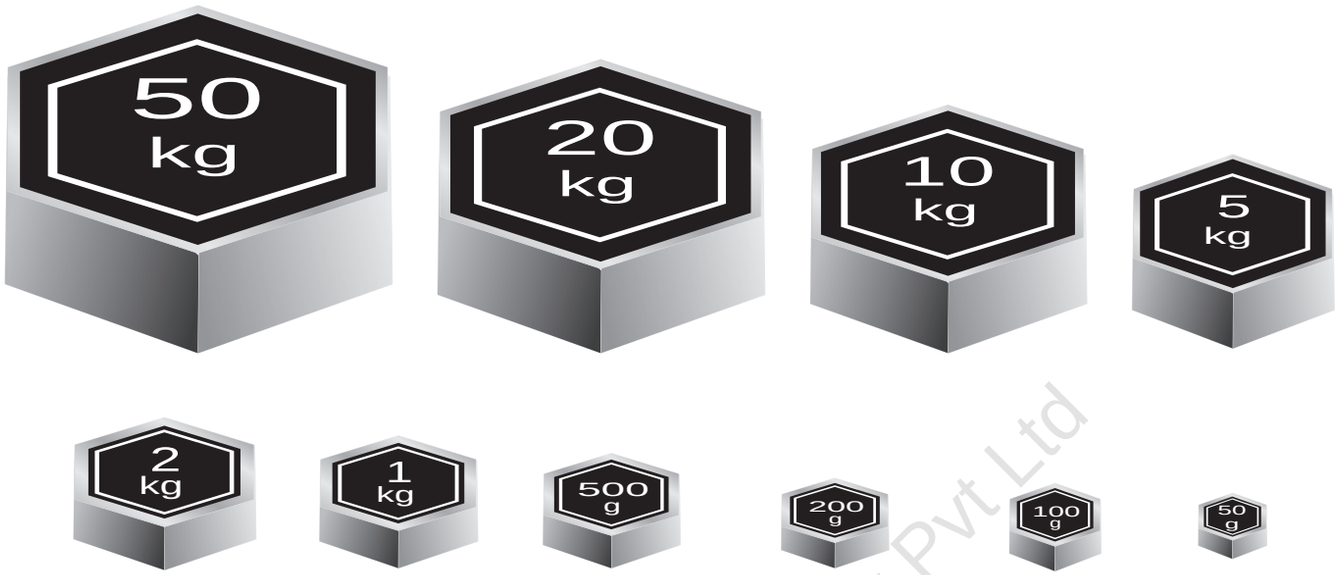


The most commonly used device to measure weight is a physical balance.

A balance has two pans.

We put the object in one pan of the balance and go on putting standard weights in the other pan till the two pans are at the same level. The total measure of these weights gives the actual weight of the object.

In general, weights of the following denominations are used:



Exercise 47

1. Write the suitable unit (kg or g) for measuring the weight of:

(a) yourself ☐ (b) a tomato ☐

(c) a pumpkin ☐ (d) your maths book ☐

(e) your school bag ☐ (f) a loaf of bread ☐

(g) a cricket ball ☐ (h) a chocolate bar ☐

2. Estimate for which of the following you need a bigger bag to carry:

(a) 1 kg potatoes or 1 kg potato chips ----------

(b) 1 kg salt or 1 kg popcorn ----------

(c) 1 kg groundnuts or 1 kg sugar ----------

(d) 1 kg peas or 1 kg cauliflower ----------

Activity Time

Activity to Demonstrate the Principle of Conservation of Weight

Take a physical balance.

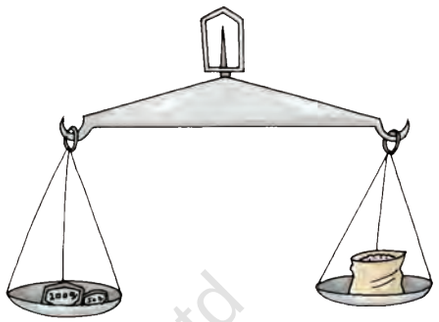
In one pan, put standard weights of 200 grams and 50 grams.

In the other pan, place a polythene bag and put some sugar in it.

Go on adding sugar to it till both the pans are at the same level.

Repeat the same activity with another polythene bag.

Now, you have two bags of sugar, each weighing 250 grams.



Now, place both the bags in one pan of the balance and in the other pan, go on putting standard weights till both the pans are at the same level. What do you observe?

You shall notice that the combined weight of these bags comes out to be 500 grams.

So, 250 g + 250 g = 500 g.

Now, place one bag of sugar in one pan of the balance and standard weights of 100 grams in the other balance. Go on removing sugar from the bag till both the pans are at the same level.

Put the sugar removed from this bag into the second bag and weigh the second bag.

What do you observe?

You shall notice that the weight of second bag comes out to be 400 grams.

And, 400 = 250 + 150.

Repeat the above activity with different materials and different weights.

Record your observations.

	Weight of bag 1	Weight of bag 2	Combined weight
1.			
2.			
3.			
4.			

Conclusion : *No weight is lost or gained when two or more lots of same or different items are mingled (or put together) or when some weight is transferred from one lot to the other.*

This is the principle of conservation of weight.

Addition and Subtraction of Weights

On the basis of the above principle, we have the following rules:

Rule 1: To add two or more weights in grams or kilograms, we simply add the numbers and put down the unit.

Observe the following additions.

	(1) ← Carry			
	3	6	kg	
+	4	8	kg	
	8	4	kg	

	(1)	(1) ← Carry		
	1	6	3	kg
	3	0	8	kg
+	2	9	6	kg
	7	6	7	kg

	(1)	(1) ← Carry		
	5	6	7	kg
+	3	8	9	kg
	9	5	6	kg

Rule 2: To subtract one weight from the other, we simply subtract the numbers and put down the unit.

Observe the following subtractions.

	(8)	(12) ← After borrowing		
	~~9~~	~~2~~	kg	
−	6	8	kg	
	2	4	kg	

	(5)	(15) ← After borrowing		
	~~6~~	~~5~~	kg	
−	3	7	kg	
	2	8	kg	

		(12) ← After borrowing		
	(8)	~~2~~	(10)	kg
	~~9~~	~~3~~	~~0~~	kg
−	6	7	5	kg
	2	5	5	kg

Relation between kg and g

Repeat the above activity with two bags each measuring 500 g.

You shall observe: 500 g + 500 g = 1 kg

But adding as shown above, we have

	5	0	0	g
+	5	0	0	g
	10	0	0	g

So, 1 kg = 1000 g.

Conversion of Kilograms into Grams and Vice Versa

We know that : 1 kg = 1000 g

Rule 1: To convert kilograms into grams, we multiply the number of kilograms by 1000.

Thus, 4 kg = (4 × 1000) g = 4000 g;

9 kg = (9 × 1000) g = 9000 g.

Rule 2: To convert kilograms and grams into grams, we multiply the number of kilograms by 1000 and add it to the number of grams.

Thus, 5 kg 675 g = (5 × 1000) g + 675 g

= 5000 g + 675 g = 5675 g.

Example 1: Convert the following into grams.

(a) 8 kg (b) 9 kg 460 g (c) 3 kg 65 g (d) 2 kg 9 g

Solution: We have:

(a) 8 kg = (8 × 1000) g = 8000 g.

(b) 9 kg 460 g = (9 × 1000) g + 460 g

= 9000 g + 460 g

= 9460 g.

(c) 3 kg 65 g = (3 × 1000) g + 65 g

= 3000 g + 65 g

= 3065 g.

(d) 2 kg 9 g = (2 × 1000) g + 9 g

= 2000 g + 9 g

= 2009 g.

Example 2: Convert the following into kilograms and grams.

(a) 4685 g (b) 7056 g (c) 9005 g

Solution: We have:

(a) 4685 g = 4000 g + 685 g

= 4 kg + 685 g

= 4 kg 685 g.

(b) 7056 g = 7000 g + 56 g

= 7 kg + 56 g

= 7 kg 56 g.

(c) 9005 g = 9000 g + 5 g

= 9 kg + 5 g

= 9 kg 5 g.

Exercise 48

1. Convert the following into grams.

(a) 5 kg (b) 6 kg 684 g (c) 2 kg 400 g

(d) 3 kg 90 g (e) 8 kg 28 g (f) 1 kg 1 g

2. Convert the following into kilograms and grams.

(a) 4000 g (b) 5764 g (c) 1085 g

(d) 5006 g (e) 3050 g (f) 9875 g

Addition of Weights

Suppose two or more measures of weight (in kg and g) are given to us. To add these measures, we arrange them in two columns of kg and g and add them separately, as shown below.

Solved Examples

Example 1: Add 28 kg 460 g and 45 kg 385 g.

Solution: We may arrange and add the given measures columnwise, as under:

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

Step 1. Adding grams.

460 g + 385 g = 845 g.

Write 845 under g column.

Step 2. Adding kg.

28 kg + 45 kg = 73 kg

Write 73 under kg column.

∴ Sum = 73 kg 845

In some cases, the sum of the figures in g column turns out to be greater than a multiple of 1000. In such cases, we convert as many grams to kg as possible and carry it over to the kg column. Consider the following example.

Example 2: Add 37 kg 875 g and 49 kg 387 g.

Solution: Arranging the given measures in two columns of kg and g and adding separately, we get:

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

Step 1. Adding grams.

875 g + 387 g = 1262 g

= 1000 g + 262 g

= 1 kg + 262 g.

Write 262 under g column and carry over 1 to kg column.

Step 2. Adding kg.

1 kg (carried over) + 37 kg + 49 kg = 87 kg.

Write 87 under kg column.

∴ Sum = 87 kg 262 g.

Short Cut Method:

Write the number of grams as 3-digit numbers.

For example, write 63 g as 063 g and 5 g as 005 g.

Expressing grams as 3-digit numbers, we may add such measures as ordinary numbers.

The following example will make the idea more clear.

Example 3: Add 34 kg 980 g, 56 kg 75 g and 9 kg 8 g.

Solution: Arrange the given measures in two columns of kg and g. Write the number of grams as 3-digit numbers. Now, add as ordinary numbers, as shown below.

	kg		g			
	(2)	(1)	(1)	(1)	← Carry	
	3	4	9	8	0	
	5	6	0	7	5	
+		9	0	0	8	
	1	0	0	0	6	3

∴ Sum = 100 kg 063 g.

Exercise 49

Add the following.

1.

	1	3	6	kg
+		7	9	kg

2.

	5	4	8	kg
+	2	7	4	kg

3.

	7	4	5	g
+	1	7	8	g

4.

	kg		g	
	9		6	3 5
+	4		2	5 3

5.

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

6.

	kg		g	
	1	8	5	6 5
+		7	3	7 5

7.

	kg		g	
	5	4	8	4 5
+	3	7	4	8 8

8.

	kg		g	
	7	0	9	9 5
+	8	0	0	0 5

9.

	kg		g	
	6	3	9	5 0
+	5	7	6	7 5

10.

	kg		g	
	7	8	9	6 0
+	5	9	0	7 5

11.

	kg		g	
	2	6	3	6 5
+	3	9	6	8 0

12.

	kg		g	
	5	0 3	9	7 0
+	3	6 7	9	8 0

13.

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

14.

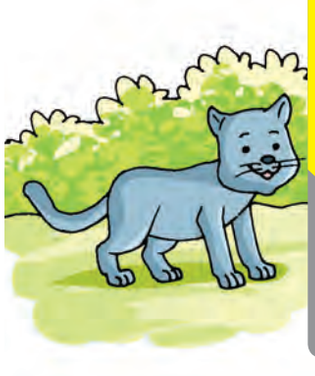
	kg		g	
	6	5	3	9 4
		9	6	7 8
+	8	3	4	6 7

15.

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

16.

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



Arrange in columns and add.

17. 76 kg 706 g, 109 kg 89 g and 7 kg 7g

18. 13 kg 576 g, 46 kg 695 g and 2 kg 80 g

19. 108 kg 985 g, 15 kg 85 g and 6 kg 960 g

20. 825 kg 975 g, 245 kg 75 g and 603 kg 80 g

Subtraction of Weights

Suppose two measures of weight (in kg and g) are given to us. To subtract the smaller measure from the larger one, we arrange them in two columns of kg and g and subtract them separately, as shown below.

Example 1: Subtract 25 kg 375 g from 40 kg 400 g.

Solution : Arranging the given measures in two columns of kg and g and subtracting columnwise, we get:

	kg		g		
			(9)		
	(3)	(10)	(3)	10	(10)
	4	0	4	0	0
–	2	5	3	7	5
	1	5	0	2	5

Step 1. Subtracting grams.

400 g – 375 g = 025 g

Write 025 under g column.

Step 2. Subtracting kg.

40 kg – 25 kg = 15 kg

Write 15 under kg column.

∴ 40 kg 400 g – 25 kg 375 g = 15 kg 25 g.

Example 2: Subtract 18 kg 675 g from 62 kg 140 g.

Solution: Arranging the given measures in two columns of kg and g and subtracting columnwise, we get:

	kg		g		
		(11)	(10)	(13)	
	(5)	1	0	3	(10)
	6	2	1	4	0
–	1	8	6	7	5
	4	3	4	6	5

Step 1. Subtracting grams.

We cannot subtract 675 g from 140 g.

So, we borrow 1 kg, leaving behind 61 kg.

Now, 1 kg 140 g = 1140 g.

∴ 1140 g – 675 g = 465 g.

Write 465 under g column.

Step 2. **Subtracting kg:**

61 kg – 18 kg = 43 kg.

Write 43 under kg column.

∴ 62 kg 140 g – 18 kg 675 g = 43 kg 465 g.

Short Cut Method:

Taking the number of grams as 3–digit numbers, arrange the given measures in two columns of kg and g. Now, subtract them as ordinary numbers, as shown below.

Example 3: Subtract 107 kg 375 g from 304 kg 50 g.

Solution : Taking the number of grams as 3-digit numbers, arrange the given measures in two columns of kg and g.

Now, subtract them as ordinary numbers, as shown below.

∴ 304 kg 50 g – 107 kg 375 g = 196 kg 675 g.

	kg		g	
	~~2~~ ~~10~~ ~~3~~		~~9~~ ~~13~~ ~~9~~ ~~14~~ ~~10~~	
	~~3~~	~~0~~	~~4~~	~~0~~ ~~5~~ ~~0~~
–	1	0	7	3 7 5
	1	9	6	6 7 5

Exercise 50

Subtract:

1.

	6	1	5	kg
–	4	6	7	kg

2.

	5	3	0	g
–	3	7	4	g

3.

	6	0	0	g
–	2	3	5	g

4.

	kg		g		
	5	2	8	0	0
–	1	9	4	8	5

5.

	kg		g		
	7	3	4	2	3
–	3	8	3	6	5

6.

	kg		g		
	6	2	1	2	5
–	4	7	4	9	6

7.

	kg			g		
	4	0	3	3	2	0
–	3	0	4	7	4	3

8.

	kg			g		
	1	5	3	4	0	0
–		4	7	5	7	5

9.

	kg	g
	9 0	0 0 0
–	3 6	4 0 5

10.

	kg	g
	3 1 5	0 7 5
–	1 8 7	1 8 9

11.

	kg	g
	8 2	1 0 0
–	5 7	8 7 5

12.

	kg	g
	5 0 0	0 0 5
–	1 4 9	1 0 9

13.

	kg	g
	6	1 0 2
–	5	3 7 8

14.

	kg	g
	1 0	0 0 0
–	0	3 7 5

15.

	kg	g
	8	0 2 5
–	6	0 7 8

16.

	kg	g
	1 8	2 1 0
–	9	6 2 5

Arrange in columns and find the difference between:

17. 58 kg 348 g and 9 kg 375 g

18. 70 kg 235 g and 58 kg 348 g

19. 10 kg 5 g and 8 kg 28 g

20. 2 kg and 385 g

21. 300 kg 50 g and 105 kg 765 g

22. 100 kg and 56 kg 125 g

Word Problems

Example 1: Mohan bought 3 kg 500 g of mangoes, 2 kg 375 g of oranges and 1 kg 50 g of apples. What is the total weight of the fruits bought by him?

Solution : Weight of mangoes = 3 kg 500 g

Weight of oranges = 2 kg 375 g

Weight of apples = 1 kg 50 g

Total weight = 3 kg 500 g + 2 kg 375 g + 1 kg 50 g

= 6 kg 925 g.

Hence, the total weight of the fruits is 6 kg 925 g.

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

Example 2: A bucket full of water weighs 14 kg 320 g. The weight of the empty bucket is 1 kg 685 g. What is the weight of water in the bucket?

Solution : Weight of bucket full of water = 14 kg 320 g.

Weight of the empty bucket = 1 kg 685 g.

Weight of water in the bucket

= 14 kg 320 g – 1 kg 685 g

= 12 kg 635 g.

Hence, the weight of water in the bucket is 12 kg 635 g.

	kg		g		
		(3)	(12)	(11)	
			~~2~~	~~1~~	(10)
	1	~~4~~	~~3~~	~~2~~	~~0~~
–		1	6	8	5
	1	2	6	3	5

Example 3: A grocer had 100 kg of sugar. He sold 15 kg 675 g to one customer and 32 kg 750 g to another customer. Find the weight of sugar left with him.

Solution : Total quantity of sugar with the grocer = 100 kg

Quantity of sugar sold to one customer = 15 kg 675 g

Quantity of sugar sold to another customer = 32 kg 750 g.

Total quantity of sugar sold = 15 kg 675 g + 32 kg 750 g

= 48 kg 425 g.

Quantity of sugar left with him = 100 kg – 48 kg 425 g

= 51 kg 575 g.

Hence, the quantity of sugar left with the grocer is 51 kg 575 g.

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

	kg		g		
	(9)	(9)	(9)	(9)	(10)
0	~~10~~	~~10~~	~~10~~	~~10~~	
~~1~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~
–	4	8	4	2	5
	5	1	5	7	5

Exercise 51

1. A packet of sweets weighs 2 kg 375 g. Another packet weighs 1 kg 950 g. How much do they weigh together?
2. Rajni bought 16 kg 350 g of rice from one shop and 13 kg 750 g of rice from another shop. How much rice did she buy in all?
3. Rahul bought 24 kg 850 g of rice; 7 kg 750 g of wheat and 4 kg 350 g of ragi for a month. What is the total weight of grains he bought?
4. Nirmal bought 2 kg 750 g of potatoes; 1 kg 880 g of tomatoes; 2 kg 375 g of brinjal and 940 g of lady finger. What is the total weight of vegetables bought by him?

5. Anil weighs 38 kg 485 g. His brother Sumeet is heavier than him by 5 kg 755 g. How much does Sumeet weigh?

6. A tin contains 17 kg 285 g of refined oil. The empty tin weighs 1 kg 365 g. What is the total weight of the tin with refined oil?

7. Sonu weighs 36 kg 200 g while his sister Monica weighs 27 kg 765 g. Who weighs more and by how much?

8. A tin full of biscuits weighs 10 kg 50 g and the empty tin weighs 1 kg 225 g. What is the weight of the biscuits in the tin?

9. Renu weighed 30 kg 360 g. She fell ill and lost 3 kg 485 g. What is her weight now?

10. The total weight of Rita and Geeta is 77 kg 340 g. If Rita weighs 38 kg 765 g, how much does Geeta weigh?

11. On Diwali festival Maneka bought 10 kg of sweets. She distributed 7 kg 275 g among her friends. How much sweets were left with her?

12. Preeti bought 12 kg 300 g of sugar in the beginning of the month. She used 11 kg 725 g of it during the month. How much sugar is left unused?

13. The total weight of a bag containing three packets of rice, sugar and tea was 17 kg. If the weight of the rice was 9 kg 650 g and the weight of sugar was 6 kg 475 g, find the weight of the packet containing tea.

14. The total weight of three girls is 95 kg. If two of them weigh 27 kg 325 g and 32 kg 775 g respectively, what is the weight of the third girl?

Things to Remember

1. The quantity of matter in an object is called its mass.
2. In our daily life, we use the word weight instead of mass.
3. We measure weights in grams and kilograms.
4. In short, we write kilograms as kg and grams as g.
5. We write the number of grams as 3-digit numbers.
   So, we write 75 g as 075 g and 5 g as 005 g.
6. To add the measures in kg and g, write the measures in two columns of kg and g. Write the number of grams as 3-digit numbers. Now, add as ordinary numbers.
7. To subtract the measures in kg and g, write them in column form and subtract as ordinary numbers.

Assessment 10

QUESTION BAG 1

(Objective Type Questions)

Tick (✓) the correct answer.

1. Which of the following would you use to measure the weight of a rock?

(a) Scale ☐ (b) Balance ☐

(c) Compass ☐ (d) Thermometer ☐

2. Which of the following units would you use to measure the weight of a bicycle?

(a) gram ☐ (b) milligram ☐ (c) kilogram ☐ (d) miles ☐

3. Which of the following is not equal to 1 kg?

(a) 

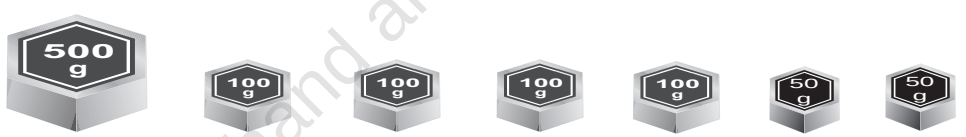
☐

(b) 

☐

(c) 

☐

(d) 

☐

4. If 5 apples together weigh 1 kg, the weight of each apple is

(a) 100 g ☐ (b) 200 g ☐ (c) 250 g ☐ (d) 500 g ☐

5. 10 apples weigh as much as 2 watermelons. How many watermelons would weigh the same as 25 apples?

(a) 3 ☐ (b) 4 ☐ (c) 5 ☐ (d) 6 ☐

6. If 3 potatoes together weigh 450 g, what is the weight of each potato?

(a) 100 g ☐ (b) 150 g ☐ (c) 200 g ☐ (d) 250 g ☐

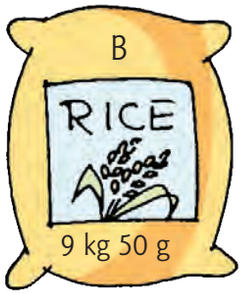
7. Which of the following would weigh closest to 70 kg?

(a) A butterfly ☐ (b) A dog ☐ (c) A cow ☐ (d) A car ☐

8. 3 kg 60 g is equal to

(a) 3600 g ☐ (b) 3006 g ☐ (c) 3060 g ☐ (d) 3660 g ☐

9. There are two bags of rice, A and B. B is heavier than A and by how much?



(a) 3 kg 660 g ☐ (b) 3 kg 440 g ☐ (c) 4 kg 560 g ☐ (d) 4 kg 760 g ☐

10. 2 kg – 280 g = ... g

(a) 1720 ☐ (b) 1820 ☐ (c) 1780 ☐ (d) 2720 ☐

11. 5 kg – 3 kg 375 g = ?

(a) 1 kg 625 g ☐ (b) 2 kg 625 g ☐ (c) 1 kg 650 g ☐ (d) 2 kg 650 g ☐

12. 3675 g – 2 kg 550 g = ... g

(a) 125 ☐ (b) 1025 ☐ (c) 1125 ☐ (d) 1225 ☐

QUESTION BAG 2

1. Write the suitable unit (kg or g) to measure the weight of:

(a) your pencil ☐ (b) a bag of rice ☐

(c) a shoe ☐ (d) an office table ☐

(e) your pencil box ☐ (f) a television set ☐

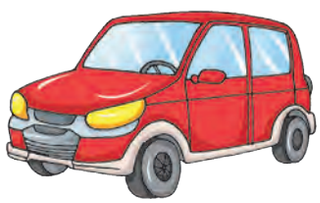
(g) a pile of 40 notebooks ☐

2. The addends in each problem are the same. Find the addend in each case.

(a) ☐ g = 1 kg (b) ☐ g + ☐ g = 1 kg

(c) ☐ g + ☐ g + ☐ g + ☐ g = 1 kg

3. Circle the best estimate.



(a)	A car weighs about:	50 kg	100 kg	1000 kg
(b)	A mobile phone weighs about:	10 g	100 g	1 kg
(c)	A birthday cake weighs about:	50 g	200 g	2 kg

(d) An inland letter weighs about: 10 g 50 g 100 kg

(e) A new-born baby weighs about: 500 g 3 kg 10 kg

4. Fill in the empty boxes.

(a) 500 g + ☐ g = 1 kg (b) 800 g + ☐ g = 1 kg

(c) 600 g + ☐ g = 1 kg (d) 300 g + ☐ g = 1 kg

(e) 150 g + 200 g + ☐ g = 1 kg

5. Put the correct sign <, > or = in the boxes.

(a) 2 kg 24 g ☐ 2224 g (b) 1 kg 500 g ☐ 1500 g

(c) 6 kg 600 g ☐ 6060 g (d) 5 kg 405 g ☐ 5045 g

(e) 7 kg 98 g ☐ 7980 g

6. At a railway station, a coolie carried a suitcase weighing 26 kg 756 g and a bag weighing 19 kg 554 g. Find the total weight carried by the coolie.

7. For a dinner party, 15 kg 485 g of wheat, 9 kg 675 g of rice and 8 kg 955 g of sugar were purchased. Find the total weight of the goods purchased.

8. A lady who weighed 84 kg 336 g joined a weight loss clinic. As a result she lost 8 kg 678 g. How much does she weigh now?

13 Measurement of Capacity

Capacity or Volume

In our everyday life, we measure the quantities of various liquids such as petrol, oil, milk, etc.

The quantity of a liquid that a container or vessel can hold is called its capacity or volume.

Thus, the capacity of a container tells us how much of a liquid it can hold.

Units of Measuring Capacity

The standard unit of capacity or volume is litre.

We measure the quantities of liquids such as milk, petrol, oil and water in litres.

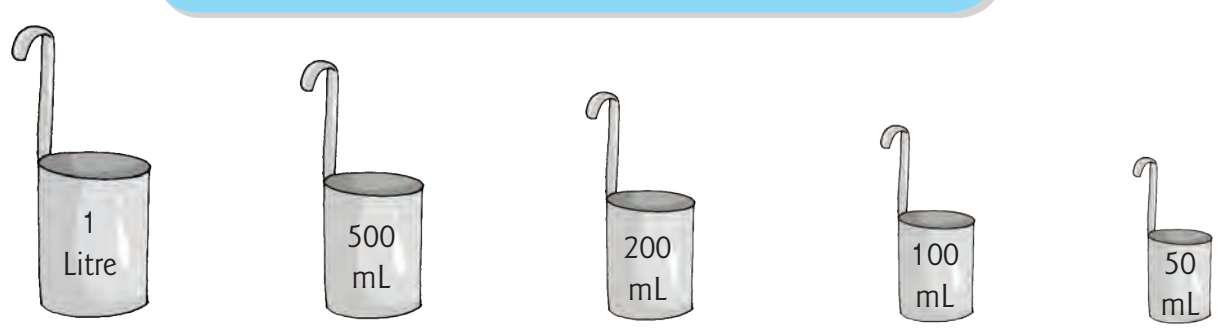
We denote 'litres' by L.

Millilitre is the smaller unit of capacity or volume. Cold drinks, medicinal liquids, shampoos, perfumes etc. in small bottles are measured in millilitres.

We denote 'millilitres' by mL.

Liquids like oil are measured with the help of standard sized vessels shown below.

Liquids like milk and water are measured with the help of standard sized vessels, shown below.



The relation between litre and millilitre is given by:

1L = 1000 mL

Conversion of Litres into Millilitres and Vice Versa

Rule 1: To convert litres into millilitres, we multiply the number of litres by 1000.

Thus, 4 L = (4 × 1000) mL = 4000 mL;

8 L = (8 × 1000) mL = 8000 mL;

Rule 2: To convert litres and millilitres into millilitres, we multiply the number of litres by 1000 and add to it the number of millilitres.

Thus, 2 L 426 mL = (2 × 1000) mL + 426 mL

= 2000 mL + 426 mL

= 2426 mL.

Example 1: Convert the following into millilitres.

(a) 9 L (b) 1 L 625 mL (c) 7 L 65 mL (d) 6 L 6 mL

Solution: We have:

(a) 9 L = (9 × 1000) mL

= 9000 mL.

(b) 1 L 625 mL = (1 × 1000) mL + 625 mL

= 1000 mL + 625 mL

= 1625 mL.

(c) 7 L 65 mL = (7 × 1000) mL + 65 mL

= 7000 mL + 65 mL

= 7065 mL.

(d) 6 L 6 mL = (6 × 1000) mL + 6 mL

= 6000 mL + 6 mL

= 6006 mL.

Example 2: Convert the following into litres and millilitres.

(a) 5635 mL (b) 2084 mL (c) 4008 mL

Solution: We have:

(a) 5635 mL = 5000 mL + 635 mL

= 5 L + 635 mL

= 5 L 635 mL.

(b) 2084 mL = 2000 mL + 84 mL

= 2 L + 84 mL

= 2 L 84 mL.

(c) 4008 mL = 4000 mL + 8 mL

= 4 L + 8 mL = 4 L 8 mL.

Exercise 52

1. Fill the appropriate unit (L or mL).

(a) Water in a storage tank ☐

(b) A glass of milk ☐

(c) A bucket full of water ☐

(d) A sachet of ketchup ☐

(e) Medicine in a syringe ☐

(f) Petrol filled in a car ☐

(g) Nail polish in a bottle ☐

2. Convert the following into millilitres.

(a) 3 L (b) 6 L (c) 7 L 800 mL

(d) 2 L 764 mL (e) 1 L 80 mL (f) 5 L 5 mL

3. Convert the following into litres and millilitres.

(a) 5000 mL (b) 8100 mL (c) 9372 mL

(d) 2048 mL (e) 6002 mL (f) 3020 mL

Activity Time

Activity to Demonstrate the Principle of Conservation of Volume

Take 2 measuring jars. Label them as Jar 1 and Jar 2.

Fill Jar 1 with water upto the 250 mL mark. Empty the water in Jar 1 into Jar 2.

Again, fill Jar 1 with water upto the 250 mL mark.

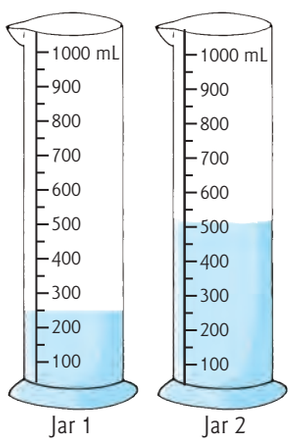
Empty it again into Jar 2.

Now, take the reading of the water level in Jar 2.

What do you observe?

You shall notice that the water level in Jar 2 touches the 500 mL mark.

So, 250 mL + 250 mL = 500 mL.



Now, pour water from Jar 2 into Jar 1 upto the 200 mL mark. Leave the remaining water in Jar 2.

What do you observe?

You shall notice that the water level in Jar 2 touches the 300 mL mark.

And, 500 = 200 + 300.

Repeat the above activity with different quantities of different liquids.

Record your observations.

What do you conclude?

Conclusion: No volume is lost or gained when two or more lots of same or different liquids are mingled together or when some volume is transferred from one lot to the other.

This is the principle of conservation of volume.

Addition and Subtraction of Capacities (or Volumes)

On the basis of the above principle, we have the following rules:

Rule 1: To add two or more capacities (or volumes), we simply add the numbers and put down the unit. Observe the following additions:

	(1) Carry		
	7	3	L
+	5	9	L
	1	3	2	L

	(1) (1) ←Carry		
	3	7	2	L
+	2	6	8	L
	6	4	0	L

	(1) Carry		
	2	8	mL
+	4	5	mL
	7	3	mL

	(1) (1) ←Carry		
		5	6	mL
	6	7	4	mL
+	1	6	7	mL
	8	9	7	mL

Rule 2: To subtract a given capacity (or volume) from the other, we simply subtract the numbers and put down the unit.

	(8) (15)		
	~~9~~	~~5~~	L
−	6	8	L
	2	7	L

	(5) (16) (15)			
	~~6~~	(6) ~~7~~	5	mL
−	3	7	8	mL
	2	9	7	mL

	(2) (9) (10)			
	~~3~~	(10) ~~0~~	0	L
−	2	1	5	L
		8	5	L

Addition of Measures in Litres and Millilitres

We arrange the given measures in two columns of L and mL and add them separately.

Here, we shall write mL as 3-digit numbers.

Thus, we write 75 mL as 075 mL and 5 mL as 005 mL.

The following examples will make the idea more clear.

Solved Examples

Example 1: Add 17 L 450 mL and 23 L 275 mL.

Solution: Arranging the given measures in two columns of L and mL, we get:

	L	mL
	①	①
	1 7	4 5 0
+	2 3	2 7 5
	4 0	7 2 5

Step 1. Adding millilitres.

450 mL + 275 mL = 725 mL.

Write 725 under mL column.

Step 2. Adding litres.

17 L + 23 L = 40 L.

Write 40 under L column.

∴ Sum = 40 L 725 mL.

Example 2: Add 24 L 978 mL and 48 L 396 mL.

Solution: Arranging the given measures in two columns of L and mL, we get:

	L	mL
	① ①	① ①
	2 4	9 7 8
+	4 8	3 9 6
	7 3	3 7 4

Step 1. Adding millilitres.

978 mL + 396 mL = 1374 mL

= 1000 mL + 374 mL

= 1 L + 374 mL.

Write 374 under mL column and carry over 1 to L column.

Step 2. Adding litres.

1L (carried over) + 24 L + 48 L = 73 L

Write 73 under L column.

∴ Sum = 73 L 374 mL.

Note : We may note here that addition may be performed as ordinary numbers provided, we write millilitres as 3-digit numbers.

Example 3: Add 45 L 738 mL, 37 L 604 mL and 19 L 85 mL.

Solution: Arranging the given measures in two columns of L and mL, we get

	L	mL
	② ①	① ①
	4 5	7 3 8
	3 7	6 0 4
+	1 9	0 8 5
1	0 2	4 2 7

Step 1. Adding millilitres.

738 mL + 604 mL + 85 mL = 1427 mL

= 1000 mL + 427 mL

= 1L + 427 mL.

Write 427 under mL column and carry over 1 to L column.

Step 2. Adding litres.

1 L(carried over) + 45 L + 37 L + 19 L = 102 L.

Write 102 under L column.

∴ Sum = 102 L 427 mL.

Exercise 53

Add:

1.

	2	3	8 L
+	3	5	6 L

2.

	5	7	8 L
+	1	8	4 L

3.

	4	8	5 L
+	2	6	7 L

4.

	L	mL
	8	6 4 5
+	3	2 5 5

5.

	L	mL
	9	7 0 6
+	1 1	2 7 9

6.

	L	mL
	3 2	9 4 8
+	9	0 5 2

7.

	L	mL
	1 7	8 2 6
+	2 3	5 7 8

8.

	L	mL
	4 6	9 5 0
+	3 9	4 7 5

9.

	L	mL
	7 6	5 8 6
+	4 5	6 7 4

10.

	L	mL
	9	6 8 5
	1 4	0 9 5
+	1 6	0 0 7

11.

	L	mL
	2 3	0 0 8
	4 7	0 5 6
+	8	7 9 5

12.

	L	mL
	2 6	9 0 0
1	0 3	7 0 0
+	6 5	5 0 0

13.

	L	mL
	0	7 3 5
	1 6	0 8 5
+	2 0 5	9 8 5

14.

	L	mL
2	0 5	8 5 3
	6 9	7 8 6
+	8	6 7 8

15.

	L	mL
1	2 5	6 7 5
	6 5	8 5 0
+	0	6 5 5

Arrange in columns and add.

16. 51 L 700 mL and 48 L 300 mL

17. 18 L 564 mL, 37 L 658 mL and 9 L 75 mL

18. 9 L 9 mL, 18 L 18 mL, 125 L 125 mL and 730 mL

19. 75 L 75 mL, 7 L 7 mL, 65 L 915 mL and 1 L 545 mL

Subtraction of Measures in Litres and Millilitres

We arrange the given measures in two columns of L and mL and subtract them separately.
Be careful, write mL as 3-digit numbers.
Study the following examples.

Solved Examples

Example 1: Subtract 29 L 358 mL from 43 L 605 mL.

Solution: Arranging the given measures in columns of L and mL, we get :

	L	mL
	3 (13)	5 ~~10~~ (15)
	~~4~~ ~~3~~	~~6~~ ~~0~~ ~~5~~
−	2 9	3 5 8
	1 4	2 4 7

Step 1. Subtracting millilitres.
605 mL − 358 mL = 247 mL.
Write 247 under mL column.

Step 2. Subtracting litres.
43 L − 29 L = 14 L.
Write 14 under L column.

∴ Difference = 14 L 247 mL.

Example 2: Subtract 69 L 475 mL from 93 L 150 mL.

Solution: Arranging the given measures in columns of L and mL, we get.

	L	mL
	(12)	(10) (14)
	(8) ~~9~~	~~1~~ ~~5~~ (10)
	~~9~~ ~~3~~	~~1~~ ~~5~~ ~~0~~
−	6 9	4 7 5
	2 3	6 7 5

Step 1. Subtracting millilitres.
Since 475 >150, we cannot subtract 475 mL from 150 mL.
So, we borrow 1 L, leaving behind 92 L.
Now, 1 L 150 mL = 1000 mL + 150 mL = 1150 mL.
∴ 1150 mL − 475 mL = 675 mL.

Step 2. Subtracting litres.
92 L − 69 L = 23 L.
Write 23 under L column.

∴ Difference = 23 L 675 mL.

Example 3: Subtract 16 L 89 mL from 41 L 5 mL.

Solution: Arranging the given measures in columns of L and mL, we get:

	L	mL
	(10)	(9) (9)
	3 ~~0~~	~~10~~ ~~10~~ (15)
	~~4~~ ~~1~~	~~0~~ ~~0~~ ~~5~~
−	1 6	0 8 9
	2 4	9 1 6

Step 1. Subtracting millilitres.
Since 89 > 5, we cannot subtract 89 mL from 5 mL.
So, we borrow 1 L, leaving behind 40 L.
Now, 1 L 5 mL = 1000 mL + 005 mL = 1005 mL.
∴ 1005 mL − 89 mL = 916 mL.
Write 916 under mL column.

Step 2. Subtracting litres.
40 L − 16 L = 24 L.
Write 24 under L column.

∴ Difference = 24 L 916 mL.

Note: Please note that subtraction may be performed as in ordinary numbers provided, we write millilitres as 3-digit numbers.

Exercise 54

Subtract:

1.

	3 6 0 mL	
–	2 7 5 mL	

2.

	5 0 0 L	
–	2 9 2 L	

3.

	8 7 3 L	
–	5 9 5 L	

4.

	L	mL
	5 4	9 5 0
–	2 8	7 6 5

5.

	L	mL
	3 1	3 1 2
–	2 5	0 8 5

6.

	L	mL
	8 0	2 0 0
–	6 8	7 2 5

7.

	L	mL
	1 3 0	7 5 0
–	8 4	9 7 5

8.

	L	mL
	4 0 3	3 2 0
–	1 5 9	4 5 6

9.

	L	mL
	7 2	6 0 5
–	9	7 1 6

10.

	L	mL
	1 0	0 0 0
–	0	9 2 5

11.

	L	mL
	6 1	0 0 5
–	1 9	0 6 6

12.

	L	mL
	5 1 3	0 6 5
–	2 1 8	7 7 7

Arrange in columns and then subtract:

13. 784 mL from 3L

14. 23 L 425 mL from 50 L

15. 7 L 165 mL from 100 L 100 mL

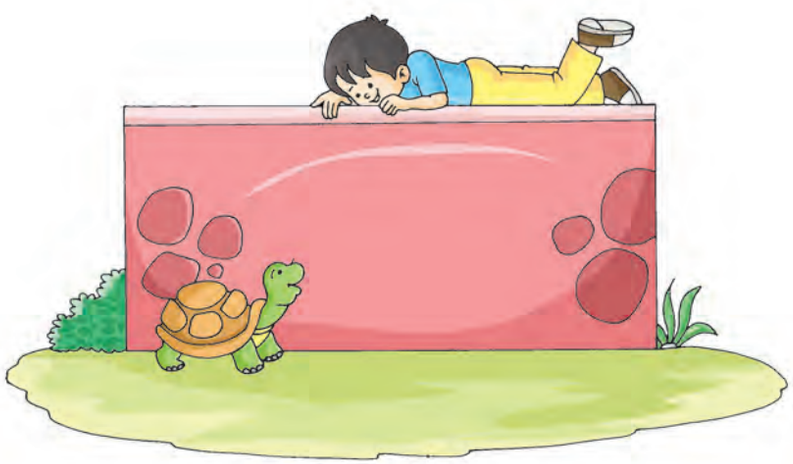
16. 78 L 385 mL from 97 L 30 mL

Find the difference between:

17. 4 L 575 mL and 9 L 55 mL

18. 34 L 75 mL and 101 L 60 mL

19. 2 L 525 mL and 3 L 100 mL



Word Problems

Example 1: A bucket holds 5 L 325 mL of milk. If 1 L 785 mL of water is added to it to make the bucket full, what is the capacity of the bucket?

Solution:

		L	mL
Quantity of milk in the bucket	=	5	325
Quantity of water added to it	=	+ 1	785
Total quantity of the mixture in the bucket	=	7	110

Hence, the capacity of the bucket is 7 L 110 mL.

Example 2: The capacity of petrol tank in a car is 26 L 200 mL. It contains 17 L 525 mL of petrol. How much more petrol it can take in?

Solution:

		L	mL
Capacity of the petrol tank in the car	=	26	200
Quantity of petrol contained in the car	=	− 17	525
Quantity of petrol that can be added to it	=	8	675

Hence, 8 L 675 mL of more petrol can be added to the tank.

Example 3: A big drum contained 105 litres of kerosene. During the day 68 L 752 mL of kerosene was sold and 587 mL was spilled. How much of the kerosene was left in the drum?

Solution:

		L	mL
Quantity of kerosene sold	=	68	725
Quantity of kerosene spilled	=	+ 0	587
Quantity of kerosene withdrawn from the drum	=	69	312

		L	mL
Now, total quantity of kerosene in the drum	=	105	000
Quantity of kerosene withdrawn from the drum	=	− 69	312
Quantity of kerosene left in the drum	=	35	688

Hence, the quantity of kerosene left in the drum is 35 L 688 mL.

Exercise 55

1. On Krishna's birthday her mother bought 6 L 750 mL of milk from one dairy and 5 L 250 mL from another dairy. How much of milk did she buy on that day?
2. A bucket contains 4 L 975 mL of milk. If 1 L 50 mL of water is added to it, what quantity of mixture will be there in the bucket?

3. Three buckets containing 8 L 125 mL, 5 L 850 mL and 4 L 60 mL of milk respectively are inverted in an empty drum. Find the total quantity of milk in the drum.

4. A tin contained 15 L 320 mL of oil. Out of it, 875 mL is wasted due to a leak in the tin. How much oil is left in the tin?

5. A bucket has a capacity of 6 litres. If it contains 2 L 325 mL of water, how much more water can be poured into it?

6. Reena takes 765 mL of cold drink from a jug containing 1 L 300 mL. How much cold drink is left in the jug?

7. Before starting for a journey, the tank of a car was filled with 25 L of petrol. At the end of the journey, 8 L 350 mL of petrol was left in the car. How much petrol was used in the journey?

8. Pamila was carrying 4 L 250 mL of milk in a can from a dairy to her home. On the way, she stumbled and some milk was spilled. On reaching home, she found that 3 L 475 mL of milk is left in the can. How much of milk was spilled on the way?

9. A shopkeeper had 60 litres of refined oil. He sold 12 L 50 mL to one customer, 20 L 550 mL to another customer and 14 L 400 mL to a third customer. How much oil is left with him?

10. A new tank was installed on a petrol pump. It had a capacity of 1000 litres. Two tankers poured 360 L 850 mL and 385 L 350 mL of petrol into it. How much more petrol can the tank hold?

11. Sunita bought 8 L 500 mL of milk. Out of it, 4 L 225 mL was used in preparing tea for a party, 2 L 50 mL was used for preparing cheese and 899 mL was taken by her child. She used the remaining quantity of milk for preparing curd. How much milk was used for curd?

Things to Remember

1. The quantity of liquid that a container or vessel can hold is called its capacity.
2. The standard unit of capacity is litre.
3. 1 litre = 1000 mL.
4. To add the measures in litres and millilitres, we arrange them in two columns of L and mL and add them separately.
5. To find the difference between two given measures (in litres and millilitres), we arrange them in two columns of L and mL and subtract them separately.
6. While adding or subtracting, we always write mL as 3-digit numbers.

   Thus, we write 5 mL as 005 mL; 65 mL as 065 mL, etc.

Assessment 11

QUESTION BAG 1

(Objective Type Questions)

Tick (✓) the correct answer.

1. The capacity of a tablespoon is measured in

(a) millilitres ☐ (b) litres ☐ (c) gallons ☐ (d) grams ☐

2. Arrange the following in the order of increasing capacities.

1. Glass 2. Jug 3. Cup 4. Bucket

(a) 2, 1, 3, 4 ☐ (b) 3, 1, 2, 4 ☐ (c) 4, 2, 1, 3 ☐ (d) 1, 3, 2, 4 ☐

3.  = 750 mL. Then,  =

(a) 200 mL ☐ (b) 250 mL ☐ (c) 300 mL ☐ (d) None of these ☐

4. 2 L 350 mL – 750 mL = ?

(a) 1 L 500 mL ☐ (b) 1 L 600 mL ☐ (c) 1 L 650 mL ☐ (d) 1 L 700 mL ☐

5. 6 L 650 mL +18 L 750 mL =?

(a) 24 L 400 mL ☐ (b) 25 L 300 mL ☐ (c) 25 L 400 mL ☐ (d) 26 L 300 mL ☐

6. If 2 jugs can hold 8 litres of water, then 5 jugs can hold..... litres.

(a) 16 ☐ (b) 18 ☐ (c) 20 ☐ (d) 24 ☐

7. A jug of capacity 2 litres can be half-filled by pouring 5 full mugs of water into it. How much water does the mug hold when it is full?

(a) 200 mL ☐ (b) 250 mL ☐ (c) 400 mL ☐ (d) 500 mL ☐

8. 50 L 250 mL – 18 L 500 mL = ?

(a) 30 L 750 mL ☐ (b) 31l 250 mL ☐ (c) 31 L 750 mL ☐ (d) 32 L 250 mL ☐

9. 3 glasses of water is equal to 1 litre. If a bucket can hold 8 litres of water, how many glasses of water is required to fill it?

(a) 9 ☐ (b) 16 ☐ (c) 24 ☐ (d) 25 ☐

10. Reena purchased 5 L 250 mL of milk. She used 3 L 750 mL during the day. What quantity of milk is she left with?

(a) 1250 mL ☐ (b) 1400 mL ☐ (c) 1500 mL ☐ (d) 1550 mL ☐

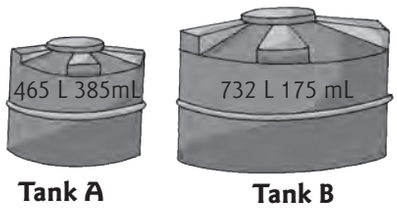
11. An oil drum has 42 L 800 mL of oil in it. If 14 L 900 mL of oil is taken out of it, how much is left?

(a) 27 L 100 mL ☐ (b) 27 L 900 mL ☐ (c) 28 L 100 mL ☐ (d) 28 L 900 mL ☐

12. Two water tanks are shown below. Tank B holds how much water more than Tank A?

(a) 266 L 790 mL ☐ (b) 267 L 365 mL ☐

(c) 267 L 560 mL ☐ (d) 333 L 590 mL ☐



QUESTION BAG 2

1. Fill in the blank boxes.

(a) 250 mL + ☐ mL = 1 L

(b) 200 mL + 500 mL + ☐ mL = 1L

(c) ☐ mL + 600 mL = 1 L

(d) 350 mL + ☐ mL + 200 mL = 1 L

(e) 1 L + ☐ mL + 500 mL = 2 L

2. Put the correct symbol >, < or = in the boxes.

(a) 5 L 25 mL ☐ 5225 mL (b) 2 L 822 mL ☐ 2822 mL

(c) 7 L 500 mL ☐ 7050 mL (d) 3 L 810 mL ☐ 3081 mL

(e) 9 L 85 mL ☐ 9850 mL

3. A tanker had 800 litres of petrol. Out of it, 608 L 500 mL was delivered to a petrol pump. How much petrol is left in the tanker now?

4. There was 62 L 320 mL water in a drum. Deepak took out 9 L 535 mL water in a bucket. How much water is left in the drum?

5. Nisha went to her school with a bottle having 2 litres of water in it. She drank 230 mL of water before the break, 365 mL during the break and 225 mL while returning home. How much water is left in the bottle?

6. Amit mixed 6 L 885 mL of hot water with 5 L 675 mL of cold water in the bucket. How much water is there in the bucket?

7. A village has two wells. One has 367 L 588 mL of water and the other has 496 L 747 mL of water. How much water do the two wells have in all?

14 Time

Clocks

As you all know, we read the time from a watch or a clock.

Look at the face or dial of clock shown here.

The dial of the clock is divided into 12 big divisions, marked as 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12.

The gap between every pair of consecutive numbers is divided into 5 equal small divisions. So, there are 60 small divisions on the whole dial. Each small division represents a minute.

The clock has two hands - a longer hand and a shorter hand.

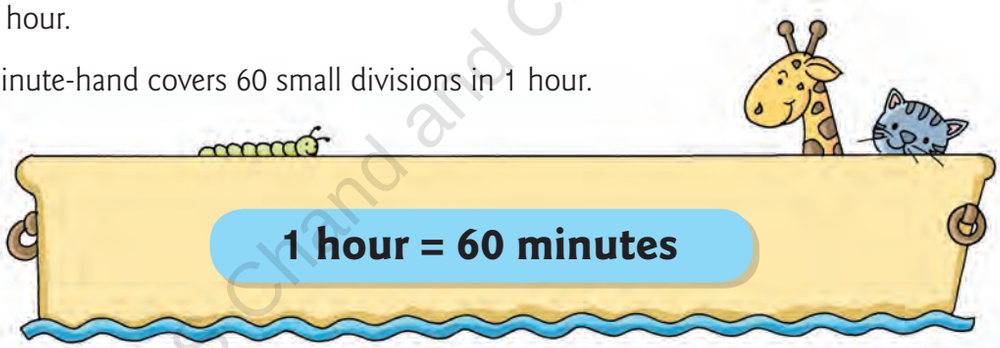
The longer hand is called the minute hand.

The shorter hand is called the hour hand.

The minute-hand moves from one small division to the next small division in 1 minute. It goes once round the dial in 1 hour.

Thus, the minute-hand covers 60 small divisions in 1 hour.

So,



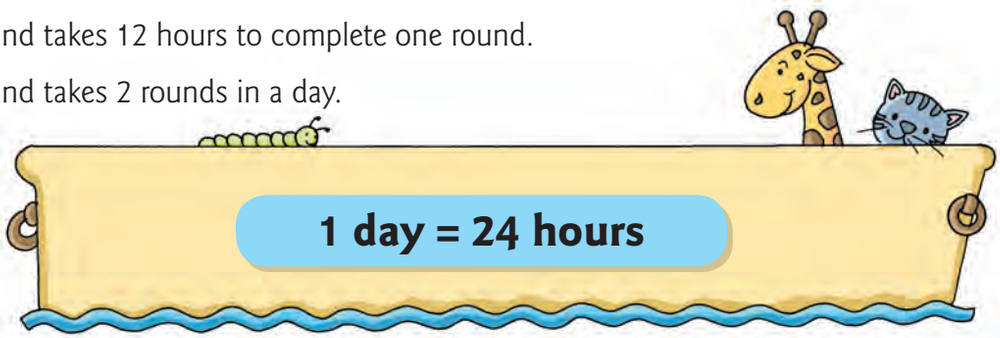
Note that the minute hand moves from one number to the next number in 5 minutes.

The hour hand moves from one number to the next number in 1 hour.

The hour hand takes 12 hours to complete one round.

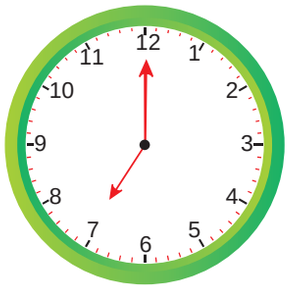
The hour hand takes 2 rounds in a day.

So,



Reading Time From a Clock

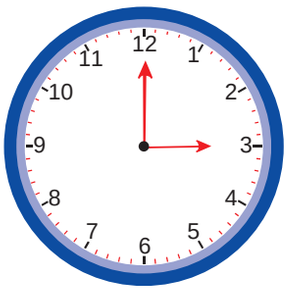
To Read Time When the Minute Hand is at 12



Look at the clock shown on the right here.

The hour hand is at 7 and the minute hand is at 12.

We say that the time is 7 o'clock or 7:00.



In the clock shown on the left,

the hour hand is at 3 and the minute hand is at 12.

We say that the time is 3 o'clock or 3:00.

In the clock on the right,

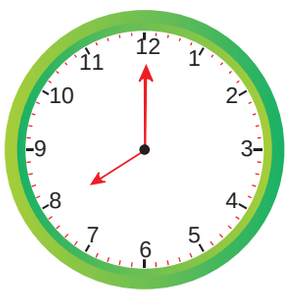
the hour hand is at 11 and the minute hand is at 12.

We say that the time is 11 o'clock or 11:00.

Exercise 56

Look at the clocks and write the correct time in each of the following:

1.



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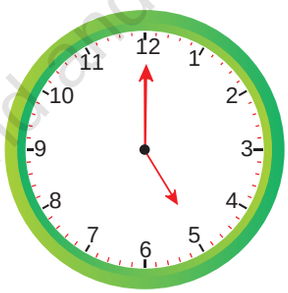

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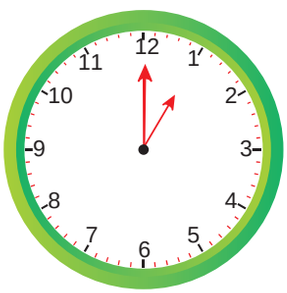

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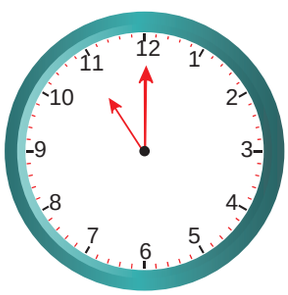
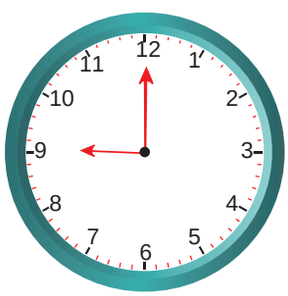
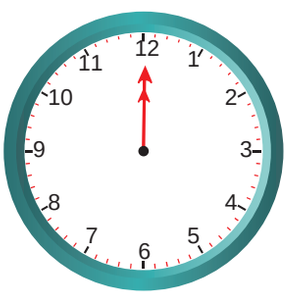


5.

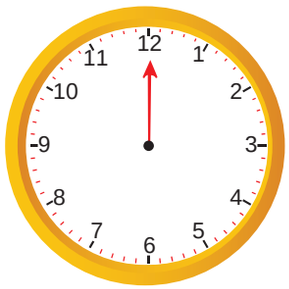


6.



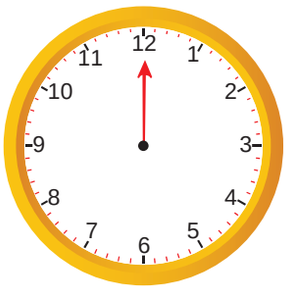
The time is given and the minute hand is drawn on the clocks. Draw the hour hand to show the correct time.

7.



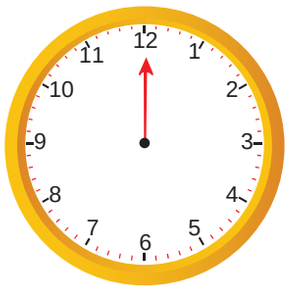
4 o' clock

8.



6 o' clock

9.



10:00

10. In the following table, the time is given. Write the positions of the minute hand and the hour hand.

	Time	Minute hand at	Hour hand at
(a)	5 o'clock		
(b)	9 o'clock		
(c)	3:00		
(d)	1:00		
(e)	12:00		

To Read Time When the Minute Hand is at any Number

When the minute hand moves from 12 to 1, it covers 5 small divisions. Similarly, upon reaching 2, it has covered 10 small divisions ; upon reaching 3, it has covered 15 small divisions; and so on.

Thus, minute hand at 1 shows $(1 \times 5) =$ 5 minutes

minute hand at 2 shows $(2 \times 5) = 10$ minutes

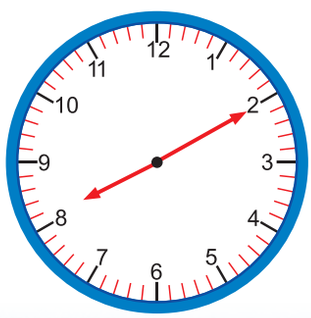
minute hand at 3 shows $(3 \times 5) = 15$ minutes

minute hand at 4 shows $(4 \times 5) = 20$ minutes.

....

minute hand at 8 shows $(8 \times 5) = 40$ minutes.

minute hand at 10 shows $(10 \times 5) = 50$ minutes.



Look at the clock shown here.

The hour hand is beyond 8 and the minute hand is at 2, showing $(2 \times 5) = 10$ minutes.

So, the time is 8:10.

We say that the time is 10 minutes past 8.

Now, observe the clock shown on the left.

The hour hand is beyond 6 and the minute hand is at 4, showing $(4 \times 5) = 20$ minutes.

So, the time is 6:20.

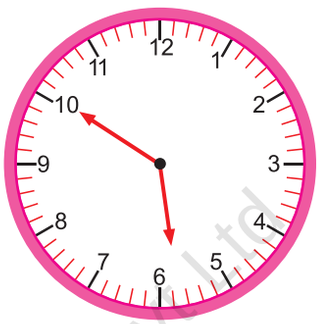
We say that it is 20 minutes past 6.

Again, look at the clock on the right.

The hour hand is beyond 5 and the minute hand is at 10, showing $(10 \times 5) = 50$ minutes.

So, the time is 5:50.

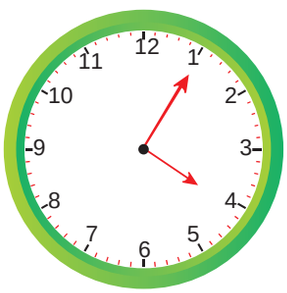
We say that it is 50 minutes past 5.



Exercise 57

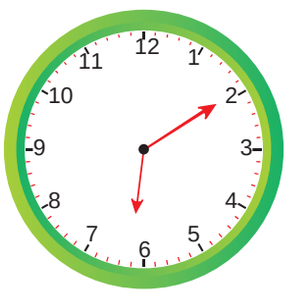
Look at each of the clocks given below and write down the correct time in numerals as well as in words.

1.



2.

3.



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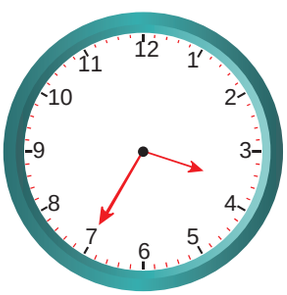
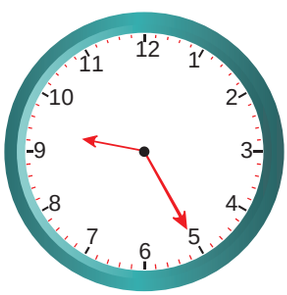
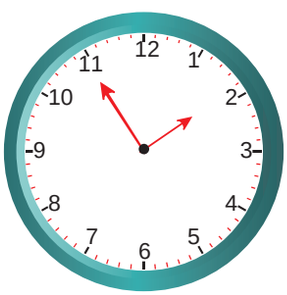


5.



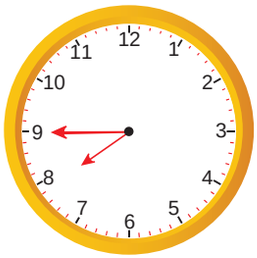
6.



7.

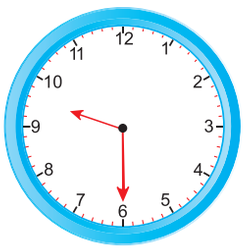
8.

9.



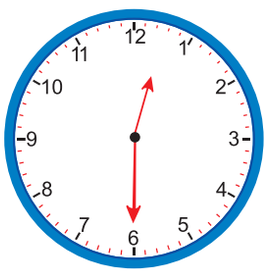
To Read Time When the Minute Hand is at 6

Look at the clock shown here.
The hour hand is beyond 3.
The minute hand is at 6.
The minute hand at 6 shows 30 minutes.
So, we say that the time is 3:30 or 30 minutes past 3.
Since 30 minutes shows half an hour, we also say that the time is half past 3.



In this clock, the hour hand is beyond 9.
The minute hand is at 6.
So, we say that the time is 9:30 or 30 minutes past 9 or half past 9.

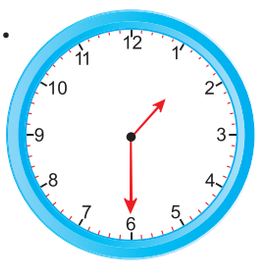
In this clock,
the hour hand is beyond 12.
The minute hand is at 6.
So, we say that the time is 12:30 or 30 minutes past 12 or half past 12.



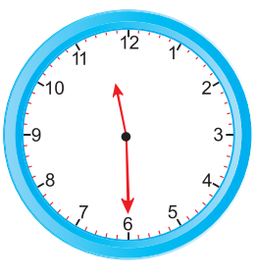
Exercise 58

Look at each clock and write the correct time shown by it in two ways.

1.

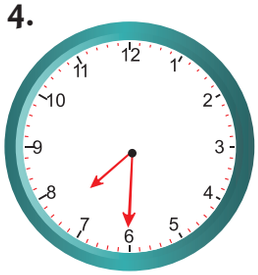


2.

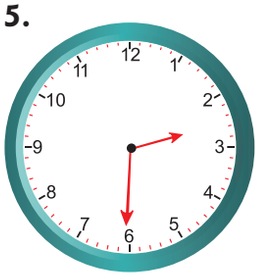


3.

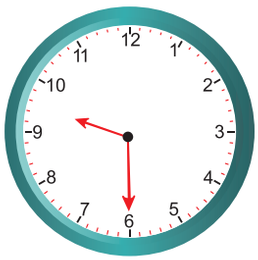
4.



5.

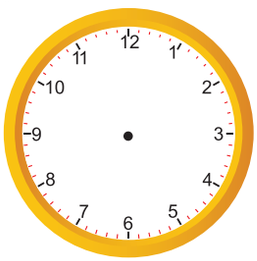


6.



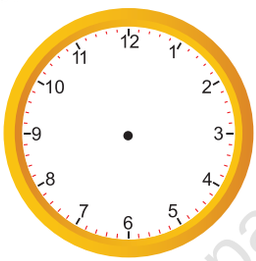
Draw the hands of each of the following clocks to show the given time.

7.



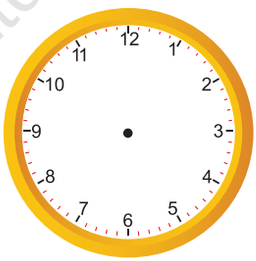
8:30

8.



10:30

9.



Half past 6

To Read Time When the Minute Hand is at 3

Look at the clock shown here.
The hour hand is beyond 10.
The minute hand is at 3.
The minute hand at 3 shows 15 minutes.
So, we say that time is 10:15 or 15 minutes past 10.
Since 15 minutes make quarter of an hour, so
we can also say that the time is quarter past 10.

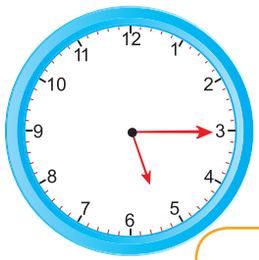
In this clock,
the hour hand is beyond 2.
The minute hand is at 3.
So, we say that the time is 2:15 or
15 minutes past 2 or quarter past 2.

In this clock,
the hour hand is beyond 6.
The minute hand is at 3.
So, we say that the time is 6:15 or 15 minutes past 6
or quarter past 6.

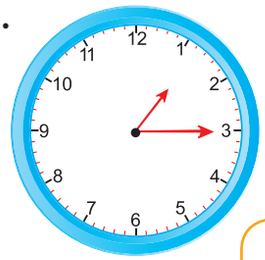
Exercise 59

Look at each clock and write the correct time shown by it in two ways.

1.

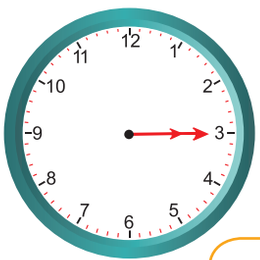


2.



3.

4.

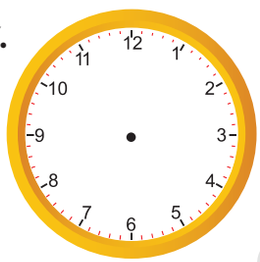


5.

6.

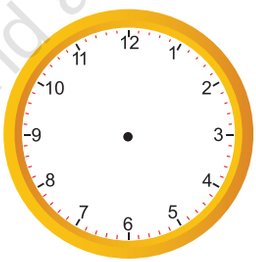
Draw the hands of each of the following clocks to show the given time.

7.



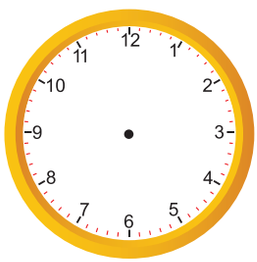
6:15

8.



10:15

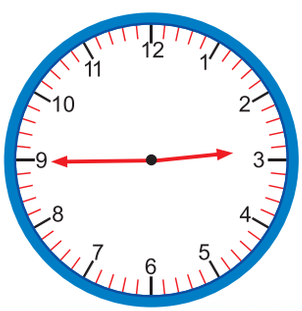
9.



Quarter past 4

To Read Time When the Minute Hand is at 9

Look at the clock shown here.



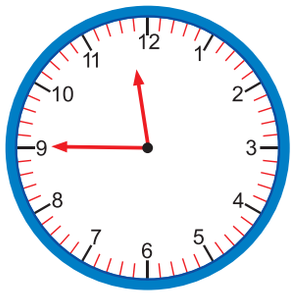
The hour hand is beyond 2. The minute hand is at 9.

The minute hand at 9 shows 45 minutes.

So, we say that the time is 2:45 or 45 minutes past 2.

Clearly, it is 15 minutes less to be 3 o'clock.

Thus, we may also say that the time is quarter to 3.



In this clock,

the hour hand is beyond 5.

The minute hand is at 9.

So, we say that the time is 5:45 or 45 minutes past 5

or quarter to 6.

In this clock,

the hour hand is beyond 11.

The minute hand is at 9.

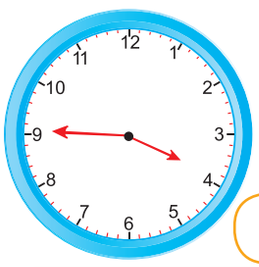
So, we say that the time is 11:45 or 45 minutes past 11

or quarter to 12.

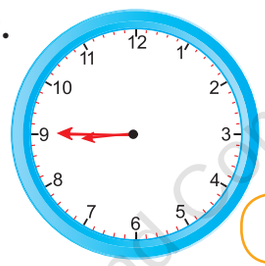
Exercise 60

Look at each clock and write the correct time shown by it in two ways.

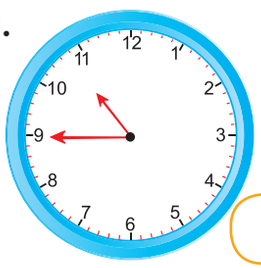
1.



2.



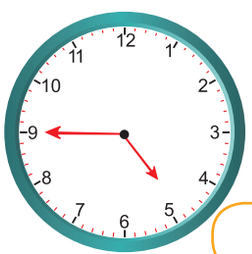
3.



4.

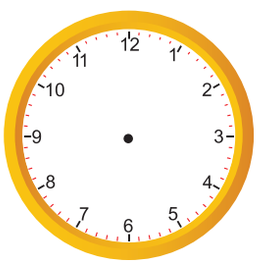
5.

6.



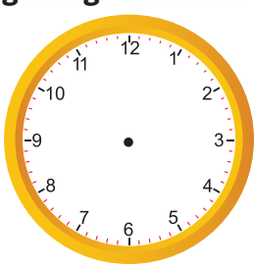
Draw the hands of the clocks showing the given time.

7.



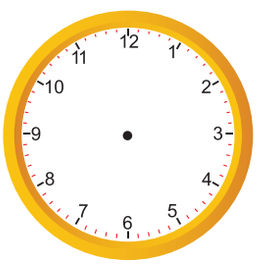
2:45

8.



Quarter to 2

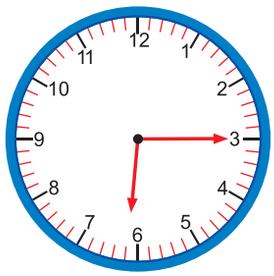
9.



Quarter to 6

Day's Routine

WAKE UP TIME



The minute hand is at ..... .

The hour hand is beyond ..... .

∴ The time is ..... .

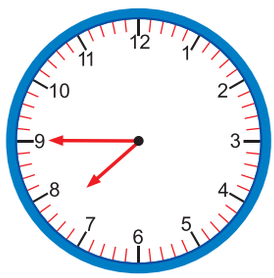
BATHING TIME

The minute hand is at ..... .

The hour hand is beyond ..... .

∴ The time is ..... .

BREAKFAST TIME

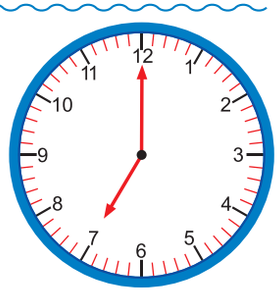


The minute hand is at ..... .

The hour hand is beyond ..... .

∴ The time is ..... .

SCHOOL GOING TIME

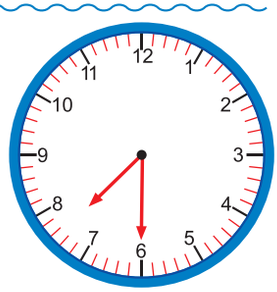


The minute hand is at ..... .

The hour hand is at ..... .

∴ The time is ..... .

SCHOOL STARTS



The minute hand is at ..... .

The hour hand is beyond ..... .

∴ The time is ..... .

LUNCH TIME AT SCHOOL

The minute hand is at ..... .

The hour hand is beyond ..... .

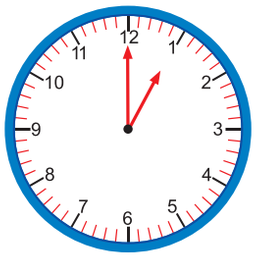
∴ The time is ..... .

SCHOOL LEAVING TIME

The minute hand is at ..... .

The hour hand is at ..... .

∴ The time is ..... .



PLAYING TIME

The minute hand is at ..... .

The hour hand is at ..... .

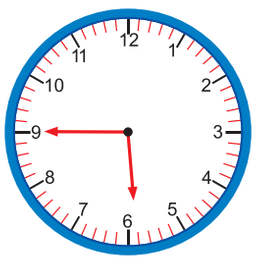
∴ The time is ..... .

STUDY TIME

The minute hand is at ..... .

The hour hand is beyond ..... .

∴ The time is ..... .

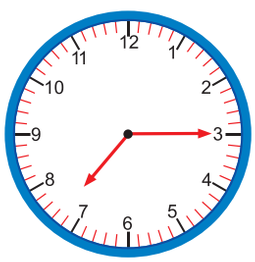


T.V. WATCHING TIME

The minute hand is at ..... .

The hour hand is beyond ..... .

∴ The time is ..... .

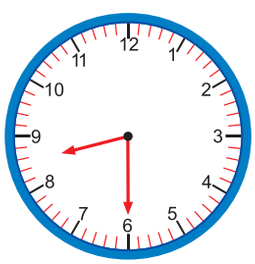


DINNER TIME

The minute hand is at ..... .

The hour hand is beyond ..... .

∴ The time is ..... .



SLEEPING TIME

The minute hand is at ..... .

The hour hand is at ..... .

∴ The time is ..... .

Activity Time

Note the time taken by you for various daily activities from morning to night, on a certain day and prepare a chart as shown below:

Activity	Starting Time	Finishing Time	Time Taken
Bathing			
Eating lunch			
Doing homework			

After preparing the above chart, you must be acquainted with the correct usage of units of time–minutes and hours.

Using this knowledge, tick (✓) the approximate time required for the given job / activity:

1. Make a phone call — 5 minutes / 5 hours

2. Tie your shoelaces — 2 minutes / 2 hours

3. Watch a movie — 20 minutes / 2 hours

4. Play with friends — 10 minutes / 1 hour

5. Eat your breakfast — 15 minutes / 2 hours

6. Sleep at night — 8 minutes / 8 hours

Things to Remember

1. In a clock, the larger hand is the minute hand and the shorter hand is the hour hand.

2. 1 hour = 60 minutes

3. 1 day = 24 hours

4. The minute hand moves from one number to the next number in 5 minutes.

5. The hour hand moves from one number to the next number in 1 hour.

6. The minute hand completes 24 rounds while the hour hand completes 2 rounds of the clock in a day.

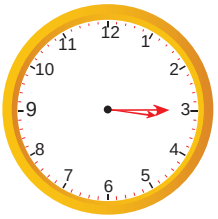
Assessment 12

QUESTION BAG 1

(Objective Type Questions)

Tick (✓) the correct answer.

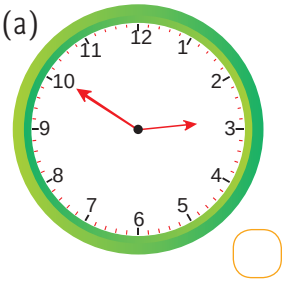
1. What is the correct time shown in the clock?

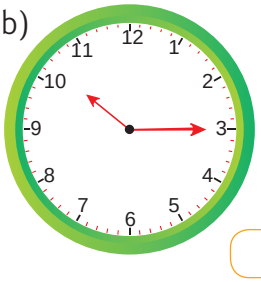


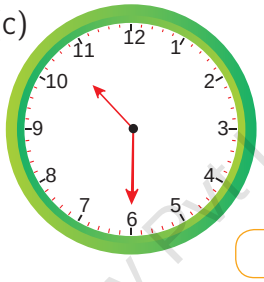
(a) Quarter to 4 ☐ (b) Half past 3 ☐

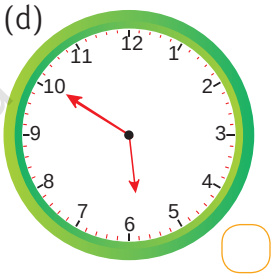
(c) 3 o' clock ☐ (d) Quarter past 3 ☐

2. Which of the following clocks shows the time as 10:30?

(a)  ☐

(b)  ☐

(c)  ☐

(d)  ☐

3. When the minute hand is at 10, it has covered ..... minutes.

(a) 30 ☐ (b) 40 ☐ (c) 50 ☐ (d) 60 ☐

4. When the minute hand is at 8, it means it has ..... minutes to complete the hour.

(a) 10 ☐ (b) 15 ☐ (c) 20 ☐ (d) 30 ☐

5. 10 minutes to 12 can be read as

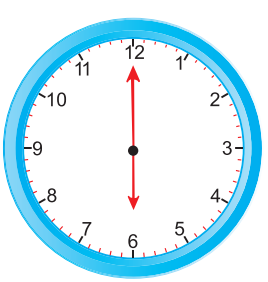
(a) 11:40 ☐ (b) 11:50 ☐ (c) 12:10 ☐ (d) 12:50 ☐

6. How many rounds does the minute hand of a clock complete in a day?

(a) 2 ☐ (b) 12 ☐ (c) 24 ☐ (d) None of these ☐

7. Rohan went to play at the time shown in clock A and came back at the time shown in clock B. How long did Rohan play ?

Clock A



Clock B

(a) 20 minutes ☐ (b) 25 minutes ☐ (c) 30 minutes ☐ (d) 60 minutes ☐

8. Which of the following is not correctly matched?

(a) 6:30 – Half past 6 ☐ (b) 11:15 – Quarter to 11 ☐

(c) 9:45 – Quarter to 10 ☐ (d) 3:10 – 10 minutes past ☐

9. How many hours does the hour hand complete in one round of the clock?

(a) 1 ☐ (b) 2 ☐ (c) 12 ☐ (d) 24 ☐

10. At what time both the hands of a clock are exactly opposite to each other?

(a) 6:00 ☐ (b) 12:30 ☐ (c) 3 :45 ☐ (d) 9:15 ☐

11. The minute hand takes ..... minutes to move from 10 to 12.

(a) 5 ☐ (b) 10 ☐ (c) 15 ☐ (d) 20 ☐

QUESTION BAG 2

1. Complete the following table.

Minute hand on	1	2	3	4	5	6	7	8	9	10	11	12
Minutes passed	5	10										

2. Fill in the blanks.

(a) The minute hand takes ..... minutes to move from 4 to 7.

(b) The hour hand takes .....hours to move from 1 to 4.

(c) At ..... both the hands will be at 12.

(d) The ..... hand of the clock is the minute hand while the ..... hand is the hour hand.

(e) When the time is a quarter past an hour, the minute hand is always at ..... .

(f) 2:15 is also read as ..... past ..... .

(g) A quarter past 6 is also read as ..... .

(h) At a quarter to an hour, the minute hand is always at ..... .

(i) When it is a quarter to an hour, the minute hand has covered ..... minutes.

(j) A quarter to 5 is also read as ..... .

(k) In one day, the hour hand goes ..... round the clock.

3. State whether each of the following statements is true or false.

(a) Quarter to 7 is written as 6:45. .....

(b) Half past 2 is written as 2:15. .....

(c) The hour hand moves faster than the minute hand. .....

(d) The hour hand moves from 1 to 3 in 10 minutes. .....

(e) At 9:30, the minute hand is between 9 and 10. .....

15 Calendar

Days, Weeks, Months and Years

Days of the Week

There are 24 hours in a day. 7 days make a week.

The names of the days of a week in order are given below:

1. Monday **2.** Tuesday **3.** Wednesday **4.** Thursday

5. Friday **6.** Saturday **7.** Sunday

Thus, Monday is the first day of the week and Sunday is the last day.

Months of a Year

There are 12 months in a year. The names of the months in correct order and the number of days contained by them are given below.

S. No.	Name of the Month	Number of Days
1.	January	31
2.	February	28 or 29
3.	March	31
4.	April	30
5.	May	31
6.	June	30
7.	July	31
8.	August	31
9.	September	30
10.	October	31
11.	November	30
12.	December	31

Note that, there are 7 months in a year which have 31 days each and 4 months which have 30 days each.

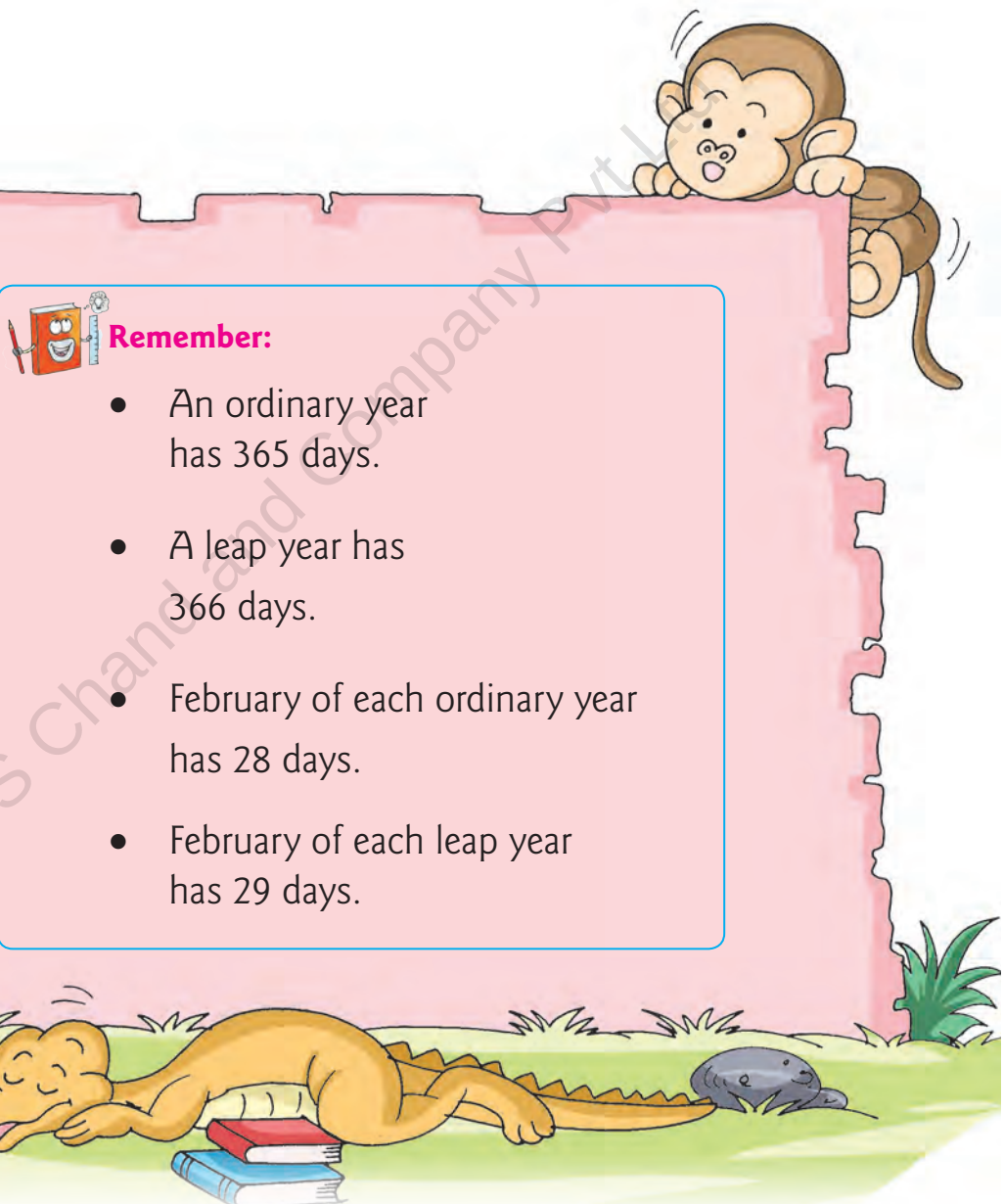
A year completely divisible by 4 is called a leap year.

Starting from a leap year, every fourth year is a leap year.

The year which is not a leap year is called an ordinary year.

The years 2000, 2004, 2008, 2012 and 2016 were leap years. Next leap years would be each one of the years 2020, 2024, 2028 and so on.

Each one of the years 2001, 2002, 2003, 2005, 2006, 2007, 2009, 2010, 2011, 2013, 2014 and 2015 is an ordinary year.



Remember:

- An ordinary year has 365 days.
- A leap year has 366 days.
- February of each ordinary year has 28 days.
- February of each leap year has 29 days.

- 10 years make a decade.
- 100 years make a century.

Calendar

Calendar is the record of all the dates of a particular year. It, thus, shows the months, weeks and days in the year. Usually, a list of festivals is also given in the calendar.

The dates corresponding to Sundays are marked in a different colour to indicate holiday.

The calendar for the year 2017 is given below:

Calendar For 2017

JANUARY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

FEBRUARY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

MARCH

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

APRIL

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

MAY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

JUNE

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

JULY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

AUGUST

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

SEPTEMBER

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

OCTOBER

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

NOVEMBER

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

DECEMBER

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

List of Holidays — 2017

14th	January	Makar Sankranti
26th	January	Republic Day
1st	February	Basant Panchami
25th	February	Maha Shivratri
13th	March	Holi
5th	April	Ram Navami
9th	April	Mahavir Jayanti
11th	April	Hanuman Jayanti
14th	April	Good Friday/Vaisakhi
10th	May	Buddha Purnima
26th	June	Id-ul-Fitr
7th	August	Raksha Bandhan
14th	August	Janmashtami
15th	August	Independence Day
20th	September	Muharram
30th	September	Dussehra
2nd	October	Gandhi Jayanti
19th	October	Diwali
20th	October	Govardhan Puja
21th	October	Bhai Duj
4th	November	Guru Nanak Jayanti
25th	December	Christmas

How to Write Dates?

When we write a date for a particular day in a year, we specify the number of the day in a month (i.e., date), the name of the month and then the year.

Examples: 5th January, 2017 or January 5, 2017

7th February, 2017 or February 7, 2017

18th August, 2017 or August 18, 2017

In short, we write a date as a group of 3 numbers separated by two dots. The first number stands for the day, the second number for the month (1 stands for January, 2 for February, 3 for March, ... and 12 for December) and the third number is the year.

Thus, 15th October, 2017 shall be written in short as:

15. 10. 2017

↓ ↓ ↓

Day Month Year

Exercise 61

1. Fill in the blanks.

(a) Rajan was born on 25.2.2008. We can also say that Rajan was born on 25th ....., 2008.

(b) How old will he be in March, 2025? .....

(c) How old will he be in March, 2051? .....

(d) On what date will he be eight years old? .....

(e) How many months old Rajan was on 25th September, 2008? .....

2. Study the given calendar for the year 2017 carefully and answer the following questions.

(a) How many Thursdays are there in August, 2017?

(b) How many months in 2017 have 5 Sundays? Write their names.

(c) Write the date of your birthday.

(d) On which day does your birthday fall in the year 2017?

(e) On which day does the year 2017 begin?

(f) Find each of the following dates in the given calendar and state the day on which it falls:

23.1.2017, 5.9.2017, 13.12.2017, 28.6.2017

3. Fill in the blanks with the correct year.

(a) In which year were you promoted to Class III? .....

(b) Which year was it two years back? .....

(c) Which year will it be after three years? .....

(d) In which year were you born? .....

(e) In which year will you be 10 years old? .....

(f) In which year will you pass out from Class III? .....

4. Look at the calendar for the year 2017 and write the day for each of the following dates.

(a) 26.1.2017 (b) 30.9.2017 (c) 15.8.2017

(d) 2.10.2017 (e) 13.3.2017 (f) 25.12.2017

Activity Time

Draw a calendar for the year 2017 on a chart paper or an ivory sheet. Colour the dates representing the birthdays of your classmates with their favourite colours and hang it in your class. This will be a ready reckoner for all of you, so that you do not forget to wish each of your classmates on his/her birthday.

Things to Remember

1. There are 7 days in a week and 12 months in a year.

2. There are 14 days in a fortnight.

3. There are 7 months in a year which have 31 days each.

These are: January, March, May, July, August, October and December.

4. There are 4 months in a year which have 30 days each.

These are: April, June, September and November.

5. A year completely divisible by 4 is called a leap year.

6. The year which is not a leap year is called an ordinary year.

7. An ordinary year has 365 days, while a leap year has 366 days.

8. February of each ordinary year has 28 days, while February of each leap year has 29 days.

9. 10 years make a decade, while 100 years make a century.

Assessment 13

QUESTION BAG 1

(Objective Type Questions)

Tick (✓) the correct answer.

1. Which day is three days ahead of Saturday?

(a) Monday ☐ (b) Tuesday ☐

(c) Wednesday ☐ (d) Thursday ☐

2. Choose the odd one out.

(a) January ☐ (b) May ☐

(c) August ☐ (d) November ☐

3. Choose the odd one out.

(a) April ☐ (b) July ☐

(c) November ☐ (d) September ☐

4. How many months in a year have 30 days each?

(a) 4 ☐ (b) 5 ☐ (c) 6 ☐ (d) 7 ☐

5. How many months in a year have 31 days each?

(a) 4 ☐ (b) 6 ☐ (c) 7 ☐ (d) 8 ☐

6. How many months are there in 2 years?

(a) 12 ☐ (b) 18 ☐ (c) 20 ☐ (d) 24 ☐

7. If the day before yesterday was Tuesday, what will be the day tomorrow?

(a) Thursday ☐ (b) Friday ☐ (c) Saturday ☐ (d) Monday ☐

8. If the day after tomorrow is Sunday, what was the day yesterday?

(a) Thursday ☐ (b) Wednesday ☐ (c) Friday ☐ (d) Saturday ☐

9. How many days are there in 12 weeks?

(a) 72 ☐ (b) 80 ☐ (c) 84 ☐ (d) 96 ☐

10. Tanya is making the following calendar for the bulletin board. Which day of the week should be on March 24?

MARCH

Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	
4	5	6	7	8	9	
11						

(a) Tuesday ☐ (b) Thursday ☐ (c) Sunday ☐ (d) Saturday ☐

11. Divya's birthday falls on 16th November, which was Saturday. Her sister Ruchi's birthday is six days after that. On which day does Ruchi's birthday fall?

(a) Sunday ☐ (b) Monday ☐ (c) Tuesday ☐ (d) Friday ☐

12. Which of the following is a leap year?

(a) 2006 ☐ (b) 2010 ☐ (c) 2012 ☐ (d) 2014 ☐

QUESTION BAG 2

1. Fill in the blanks.

(a) 1 year = ... days

(b) 1 year = ... months

(c) 1 leap year = ... days

(d) 1 fortnight = ... days

(e) 1 decade = ... years

(f) 1 century = ... years

(g) 1 week = ... days

2. Circle the years which are leap years.

1998 1992 2006 2000 1994 2008 2010

16 Geometry

Point, Line Segment, Line and Ray

I. POINT

A dot (.) represents a point.

We name a point by a capital letter A, B, P, Q etc.

Mark a dot with the help of a fine pencil on a piece of paper. Name it A.

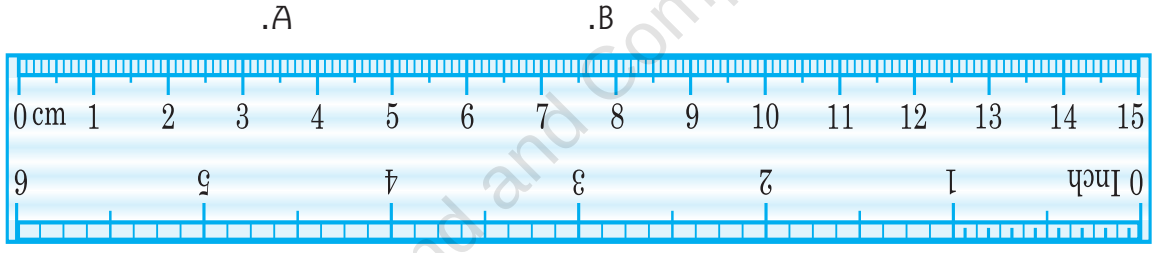
We say that A is a point. . A

A point shows a definite position. A point has no length, breadth or thickness.

II. LINE SEGMENT

Let us mark two points A and B on a paper.

We put a ruler in such a way that one of its straight edges touches both the points as shown below.



We hold the ruler firmly and move the pencil from A to B along the edge of the ruler.

We get a figure as shown on the right. A ——— B

This is called a line segment AB, written as $\overline{AB}$.

Actually, the straight path from A to B is called the line segment $\overline{AB}$.

The points A and B are called the end points of $\overline{AB}$.

The distance between the points A and B is called the length of $\overline{AB}$.

Properties of a Line Segment

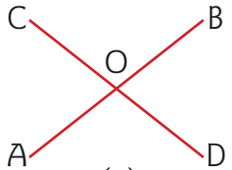
(a) A line segment has two end points.

(b) A line segment has a definite length, but no breadth or thickness.

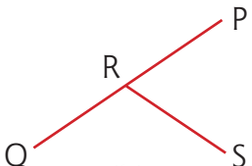
(c) A line segment can be drawn on a paper.

Whenever two line segments meet, they meet at a point.

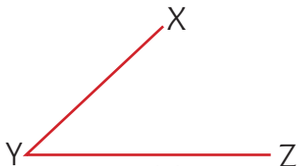
The point at which two or more line segments meet is known as the point of intersection.



(a)



(b)



(c)

In figure (a), the line segments AB and CD meet at O. So, O is the point of intersection of line segments AB and CD.

In figure (b), the line segments PQ and RS meet at R. So, R is the point of intersection of line segments PQ and RS.

In figure (c), the line segments XY and YZ meet at Y. So,Y is the point of intersection of line segments XY and YZ.

III. LINE

A line segment AB extended endlessly on both sides is called a line and we denote it by $\overleftrightarrow{AB}$.

Actually, we cannot draw a line.

By drawing a line, we shall mean to draw a line segment AB, extend it in both ways and put arrow heads on both sides as shown here.

Properties of a Line

(a) A line has no end points.

(b) Since a line extends indefinitely in both the directions, it has no definite length.

(c) We represent a line AB by $\overleftrightarrow{AB}$.

(d) Practically, we cannot draw a line on paper. We can only draw a part of a line and put arrow heads on both the sides.

IV. RAY

A line segment extended endlessly in one direction is called a ray.

Thus, a line segment AB extending endlessly in the direction from A to B and marked by an arrow mark at B, represents a ray $\overrightarrow{AB}$.

Properties of a Ray

(a) A ray $\overrightarrow{AB}$ has one end point, namely A.

This point A is called the initial point of ray $\overrightarrow{AB}$.

(b) A ray has no definite length.

(c) Since a ray is endless in one direction, it cannot be drawn on a paper.

By drawing a ray $\overrightarrow{AB}$, we would mean that we draw a line segment AB, extend it from B onwards and put an arrow head as shown.

Different Types of Lines

(a) Horizontal Lines (Sleeping Lines):

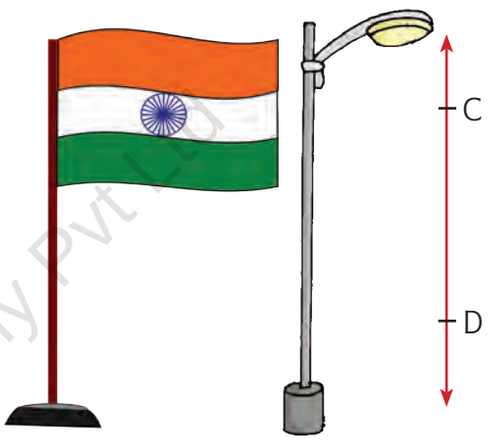
In the given figure, a pencil is lying flat on the ground.

We say that the pencil is lying horizontally.

Similarly, a line drawn horizontally is called a horizontal line.

Thus, in the adjoining figure, $\overleftrightarrow{AB}$ is a horizontal line.

(b) Vertical Lines (Standing Lines):



Look at a flagmast standing on the ground or an electric pole on the roadside. We say that the flagmast as well as the electric pole are standing vertically on the ground.

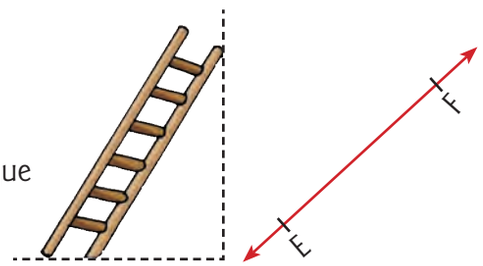
Similarly, a line drawn vertically is called a vertical line.

Thus, in the adjoining figure, $\overleftrightarrow{CD}$ is a vertical line.

Anything 'lying flat' is said to be in a horizontal position, while anything 'standing straight upright' is said to be in a vertical position.

(c) Oblique or Slanting Lines:

Look at the figure of a ladder on a vertical wall. The ladder is in a slanting position. Similarly, a line drawn in the slanting position is called an oblique line.



Thus, in the adjoining figure, $\overleftrightarrow{EF}$ is an oblique line.

A line which is neither horizontal nor vertical, is called an oblique or a slanting line.

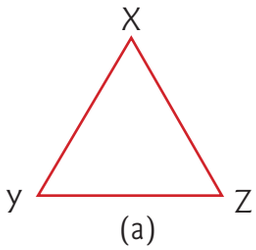
Exercise 62

1. Name the points shown in the figure.

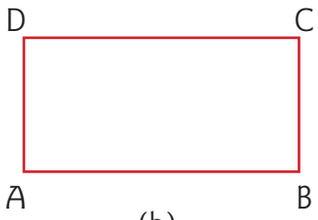
P. Q.

2. Name the points marked between P and Q on the line segment $\overline{PQ}$.

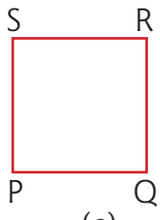
3. Name the line segments in each of the following figures.



(a)

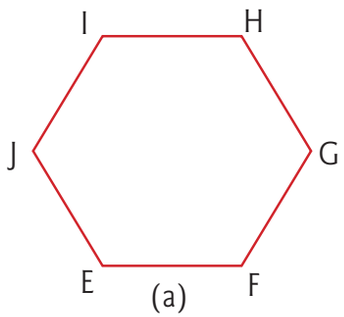


(b)

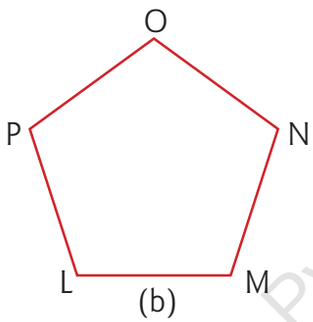


(c)

4. Name the line segments in each of the figures given below.



(a)



(b)

5. Mark a point P on your paper. Draw six line segments, each containing the marked point.

Can you draw some more line segments?

6. Mark two points M and N on a sheet of paper as shown: M. N.

How many line segments can you draw passing through both these points?

7. Look at the figure and answer the following questions.

(a) Where do AC and BD meet?

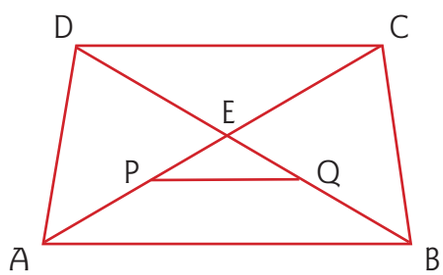
(b) Where do PQ and AE meet?

(c) Where do PC and QD meet?

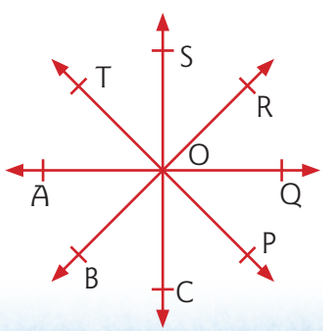
(d) At what point do AD and CD meet?

(e) Name seven points in the given figure.

(f) Name seven line segments in the given figure.



8. Write the names of the rays from the figure given below:



9. Fill in the blanks.

(a) A line segment has ..... end points.

(b) A line has ..... end points.

(c) A ray has ..... end point.

(d) A line segment has a ..... length.

(e) A line AB is represented by ..... .

(f) A ray AB is represented by ..... .

(g) A dot (.) represents a ..... .

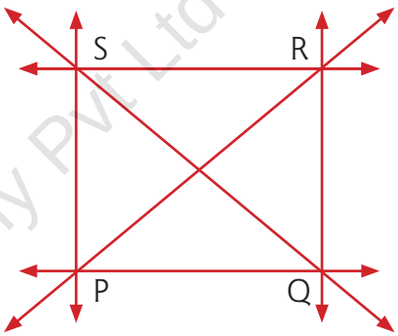
(h) A point shows a definite ..... .

10. In the given figure,

(a) name the horizontal lines.

(b) name the vertical lines.

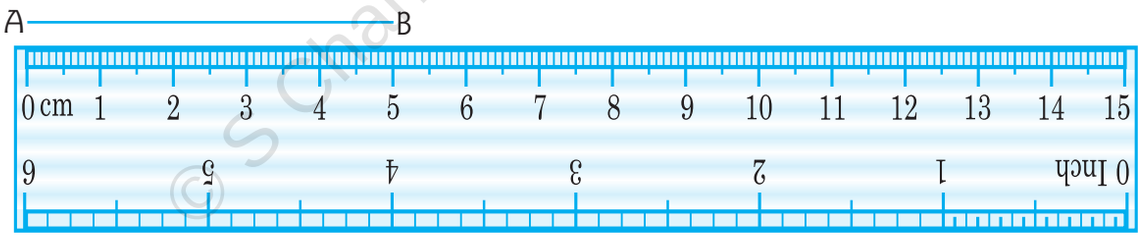
(c) name the oblique lines.



Measuring Line Segments

As we have learnt earlier, we measure the length of a line segment with the help of a ruler or a 15 cm scale.

Suppose we have to measure the length of a line segment $\overline{AB}$ as shown below. Put the ruler along the line in such a way that one of its edges touches both the points A and B and the 0 mark of the ruler is at A.



Now, read the ruler mark at B.

The reading of the scale at B gives the length of the line segment $\overline{AB}$ in cm.

Here, it reads 5 cm.

Therefore, length of $\overline{AB}$ = 5 cm.

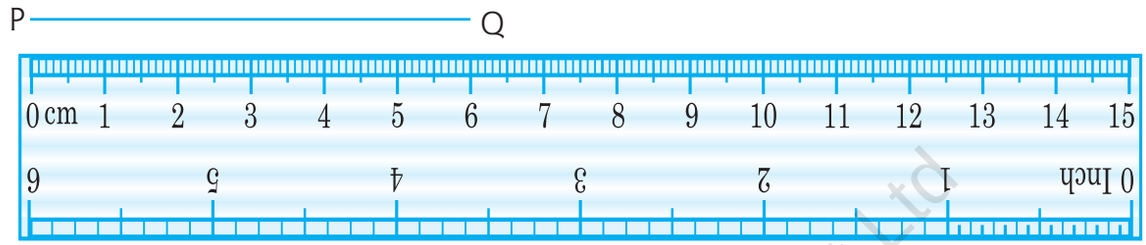
To Draw a Line Segment of a Given Length

Suppose we have to draw a line segment of length 6 cm. We proceed as follows:

Step 1: Put the ruler on a piece of paper. Hold it firmly.

Step 2: With the help of a sharp pencil, mark a point P against the 0 mark of the ruler and a point Q against the 6 cm mark of the ruler.

Step 3: Move the pencil from P to Q along the edge of the ruler.



Thus, we obtain the line segment PQ whose measure is 6 cm.

Exercise 63

1. Construct a line segment AB of length 7 cm.

2. Construct a line segment XY of length 4 cm.

3. Construct a line segment of length 8 cm.

4. Construct a line segment of length 9 cm.

5. Measure each of the following line segments.

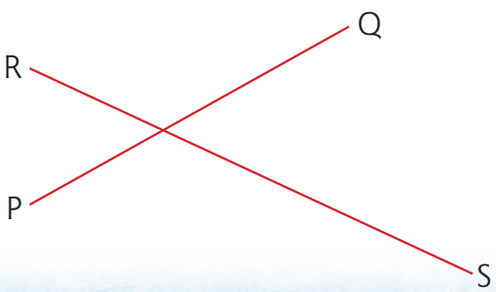
(a) $\overline{AB}$ = ... cm

(b) $\overline{CD}$ = ... cm

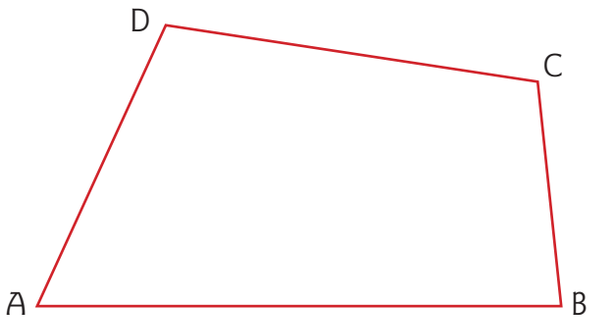
(c) $\overline{EF}$ = ... cm

(d) $\overline{GH}$ = ... cm

(e) $\overline{PQ}$ = ... cm and $\overline{RS}$ = ... cm



6. Measure each side of the given figure and write in the space provided.



AB = ...

BC = ...

CD = ...

DA = ...

Triangle, Quadrilateral, Rectangle, Square and Circle

Triangle

A figure bounded by three line segments is called a triangle.

The three line segments forming a triangle are called its sides.

The point at which two sides of a triangle meet is called a vertex of the triangle.

A triangle has 3 sides and 3 vertices.

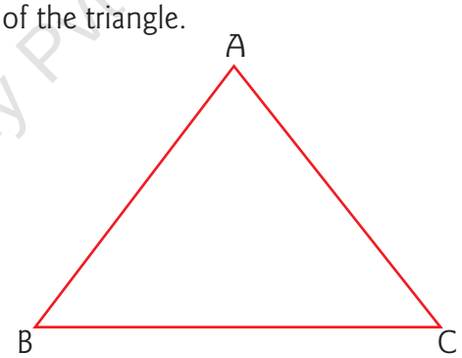
We name a triangle by its vertices.

In the given figure, ABC is a triangle.

This triangle has

(a) three vertices, namely A, B and C.

(b) three sides namely AB, BC and CA.



Quadrilateral

A figure bounded by four line segments is called a quadrilateral.

The four line segments forming a quadrilateral are called its sides.

The point at which two sides of a quadrilateral meet is called its vertex.

A quadrilateral has 4 sides and 4 vertices.

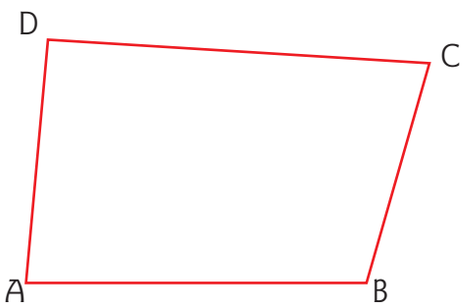
We name a quadrilateral by its vertices.

In the given figure, ABCD is a quadrilateral.

This quadrilateral has

(a) four vertices, namely A, B, C and D.

(b) four sides, namely AB, BC, CD and DA.

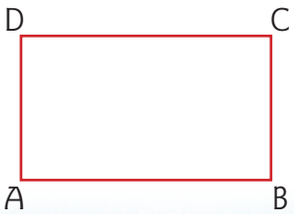


Rectangle

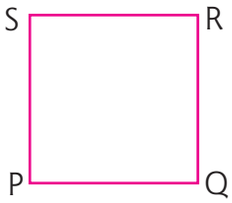
A quadrilateral bounded by two horizontal line segments and two vertical line segments is called a rectangle.

The opposite sides of a rectangle are equal. In the given figure,

ABCD is a rectangle in which AB = DC and BC = AD.



Square

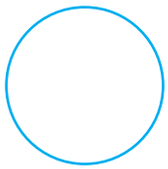


A rectangle having all sides of the same length is called a square.

In the figure, PQRS is a square in which $\overline{PQ} = \overline{QR} = \overline{RS} = \overline{SP}$

Circle

If we place a bangle or a rupee coin on a piece of paper and move a pencil around it, we get a figure shown alongside.

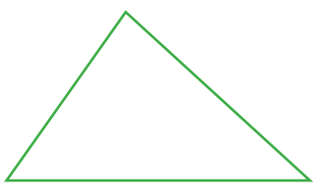


We call it a circle.

It has no sides and no vertices.

Exercise 64

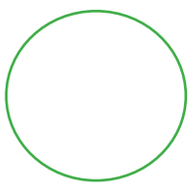
1. Name each of the following figures.

(a) 

.....

(b) 

.....

(c) 

.....

(d) 

.....

(e) 

.....

2. Which shape do the following have?

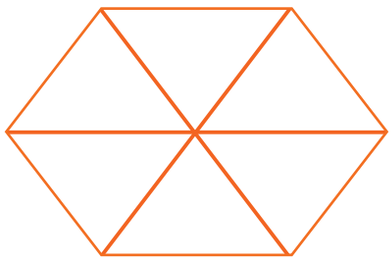
(a) The wheel of a bicycle .....
(b) A blackboard .....
(c) A page of the book .....
(d) The face of the full moon .....
(e) A set-square in a geometry box .....
(f) A postcard .....
(g) The surface of a book .....
(h) The face of a dice .....

3. Fill in the blanks.

(a) A triangle has ..... sides and ..... vertices.
(b) A rectangle has ..... sides and ..... vertices.
(c) All the sides of a square are ..... .
(d) The ..... sides of a rectangle are equal.
(e) A circle has ..... side and ..... vertex.

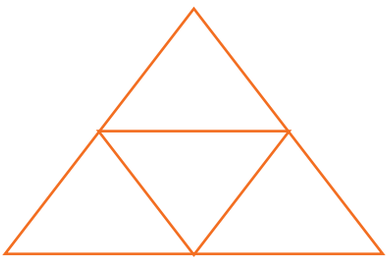
4. Look at the following figures and count the number of triangles in each case.

(a)



.....

(b)



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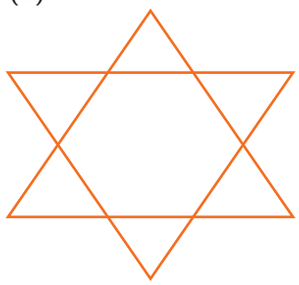
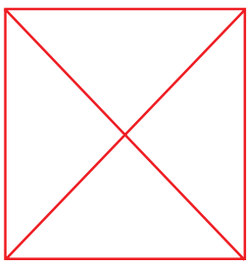
(c)



.....

(d)



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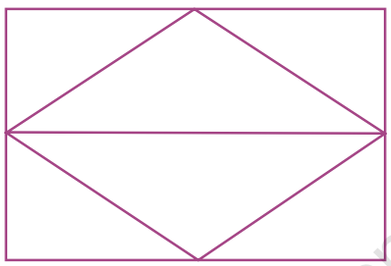
(e)



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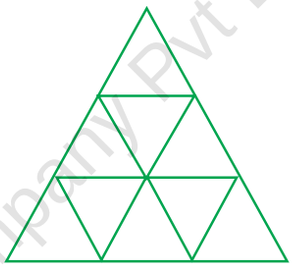
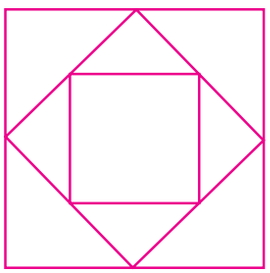
(f)



.....

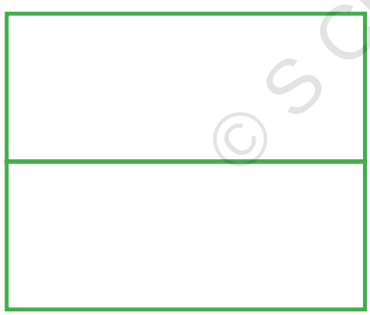
(g)



.....

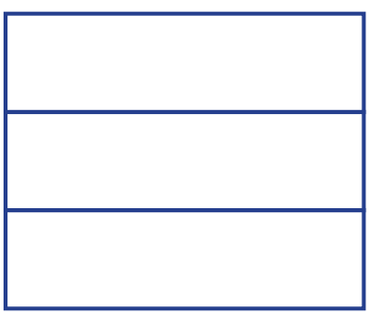
5. Look at the following figures and count the number of rectangles in each case.

(a)



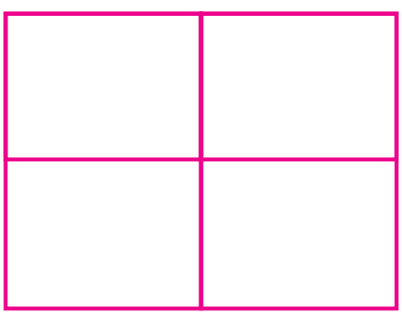
.....

(b)



.....

(c)



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Solids

Idea of Space

When we kick a ball, it goes up in the air. We say that the ball is moving in space. Similarly, we say that an aeroplane moves in space.

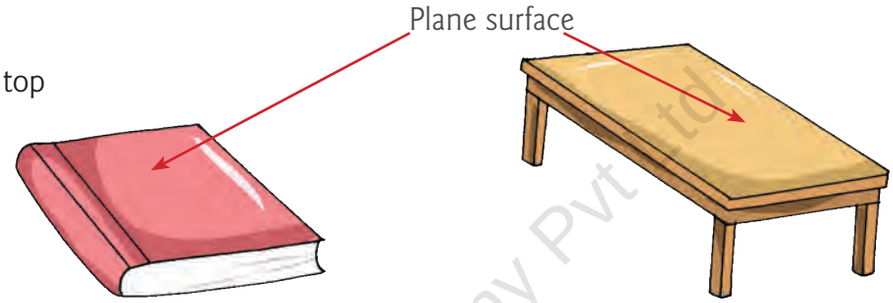
Solid

An object that occupies space is called a solid. Solids can be of various shapes.

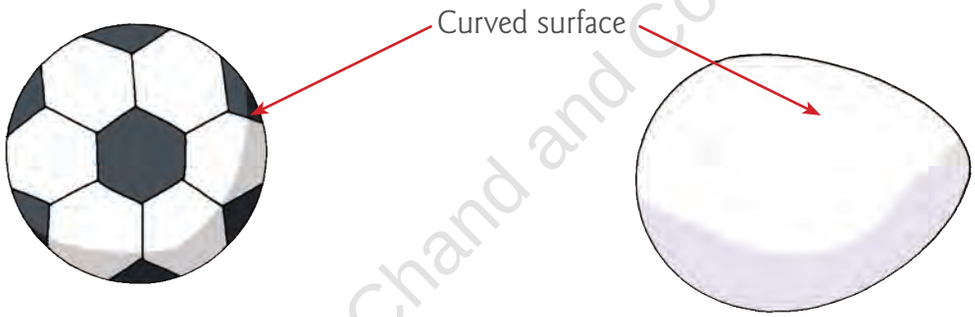
The outside of a solid is called its surface. The surface may be plane or curved.

A plane is a flat surface.

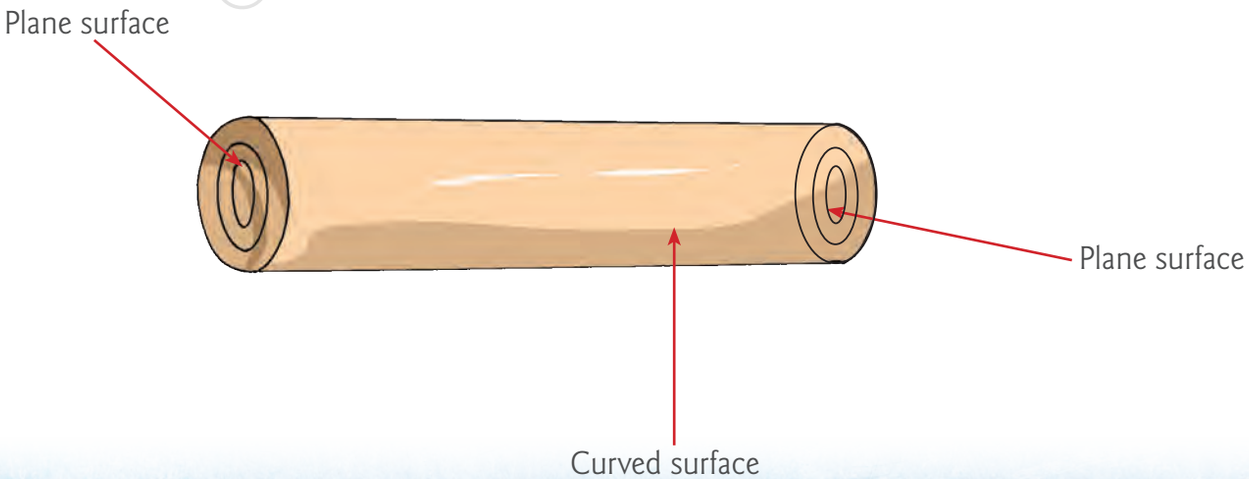
The floor of a room, the top of a desk, the surface of a blackboard are all plane surfaces.



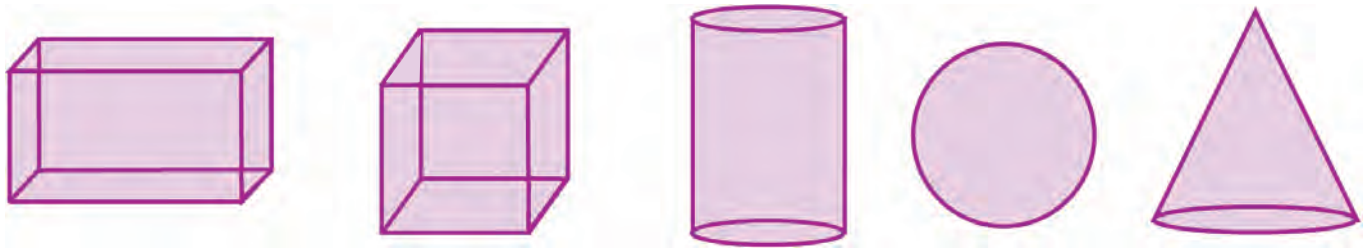
On the other hand, the surface of a football, an egg or a globe all have curved surfaces.



However, if you observe a log of wood, it has one curved surface and two plane surfaces.



Some of the shapes of solids are:



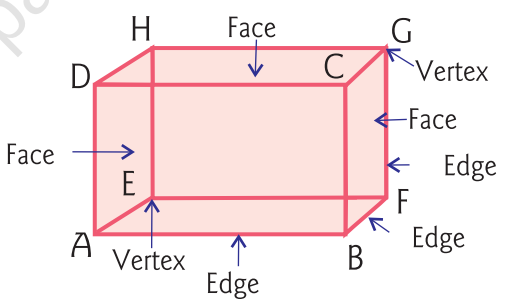
(a) Cuboid (b) Cube (c) Cylinder (d) Sphere (e) Cone

Cuboid

Each of the solids — a wooden box, a match box, a chalk box, a tea-pack, a brick, a book, an almirah, etc, — is in the shape of a cuboid.

Suitcase Match box Tea-pack Book Almirah Brick

Look at the cuboid shown in the adjoining figure.



A cuboid has six faces, each of which is a rectangle in shape.

In the figure, the six faces shown are ABCD, EFGH, DCGH, ABFE, BFGC and AEHD.

The opposite faces of a cuboid are identical.

Two adjacent faces of a cuboid meet at a line segment, which is called an edge of the cuboid.

A cuboid has 12 edges, namely AB, BF, EF, AE, AD, BC, FG, EH, DC, CG, GH, DH.

Three edges of a cuboid meet at a point, called a vertex.

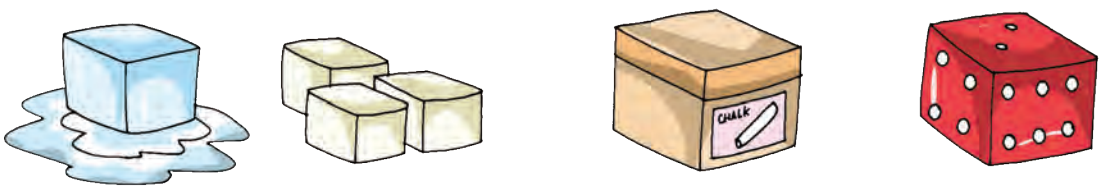
A cuboid has 8 vertices, namely A, B, C, D, E, F, G and H.

Cube

A cuboid which has 6 identical faces is called a **cube.**

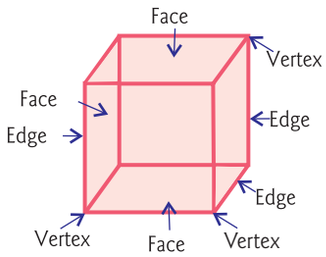
Thus, each face of a cube is a square.

Ice-cubes, sugar-cubes, dice etc. are all examples of a cube.



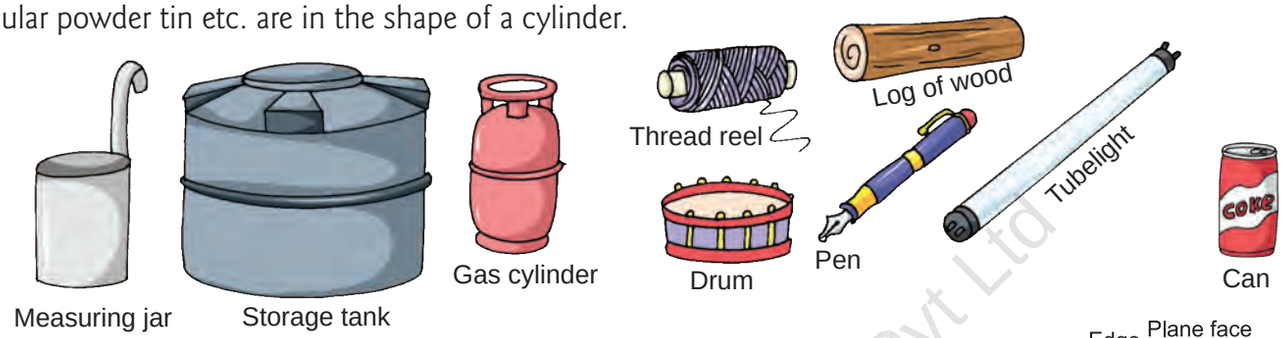
Ice-cube Sugar-cubes Chalk-box Dice

A cube has 6 faces, 12 edges and 8 vertices.



Cylinder

Objects such as a circular pillar, a circular pipe, a circular storage tank, a measuring jar, a gas cylinder, circular powder tin etc. are in the shape of a cylinder.

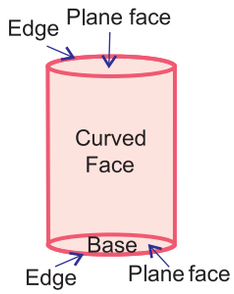


A cylinder has two plane faces and one curved face.

A cylinder has two edges, both of which are circular.

A cylinder has no vertex.

The base and the top of a cylinder are of the same shape and size.



Sphere

The objects which are in the shape of a ball are known to have the shape of a sphere.

A sphere has only one curved face.

A sphere has no vertex and no edge.

Cone

Objects such as an ice cream cone, a funnel, a conical tent, a conical vessel, a clown's cap, tapered end of a pencil are in the shape of a cone.

A cone has one plane face, which is its base.

A cone has one curved face.

A cone has one vertex.

A cone has one circular edge, where the curved face meets the plane face.

Summary:

Solid	Vertices	Plane faces	Curved faces	Edges
Cuboid	8	6	0	12
Cube	8	6	0	12
Cylinder	0	2	1	2
Sphere	0	0	1	0
Cone	1	1	1	1

Exercise 65

1. Tick (✓) the correct answer.

(a) A cricket ball has a plane/curved surface.

(b) The top of a book has a plane/curved surface.

(c) An orange has a plane/curved surface.

(d) The bottom of a brick has a plane/curved surface.

2. Identify the shape of each of the following objects.

(a) Funnel ..... (b) Watermelon .....

(c) Battery cell ..... (d) Tubelight .....

(e) Pickle jar ..... (f) Dice .....

(g) Garden roller ..... (h) Candle .....

(i) Orange ..... (j) Pencil-box .....

3. Fill in the blanks.

(a) A cuboid has ..... faces, ... edges and ..... vertices.

(b) The ..... faces of a cuboid are identical.

(c) All the faces of a ..... are identical.

(d) A .....has no vertex and no edge.

(e) A ..... has one plane face, one curved face, one vertex and one edge.

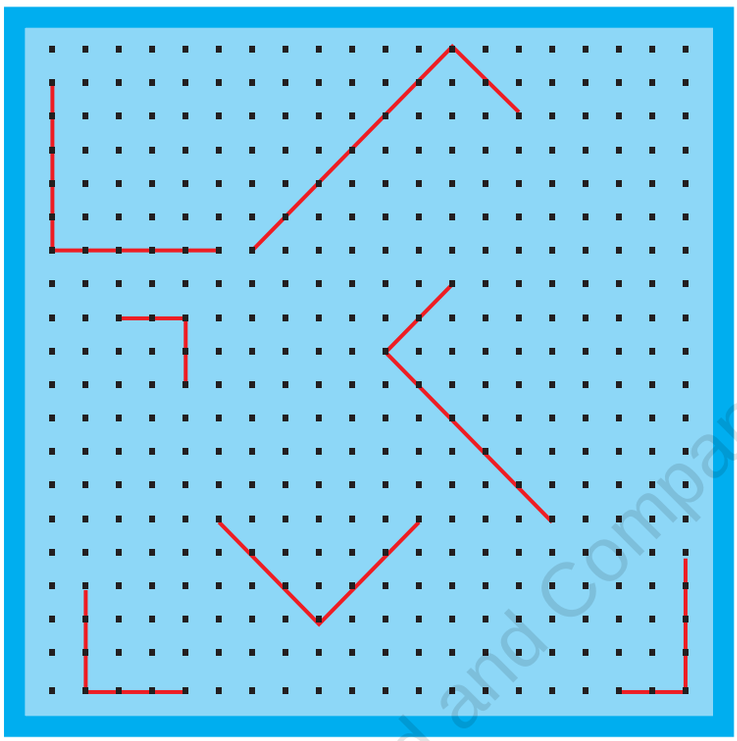
(f) A cylinder has ..... plane faces and ..... edges.

(g) A ..... has two edges and no vertex.

Activity Time

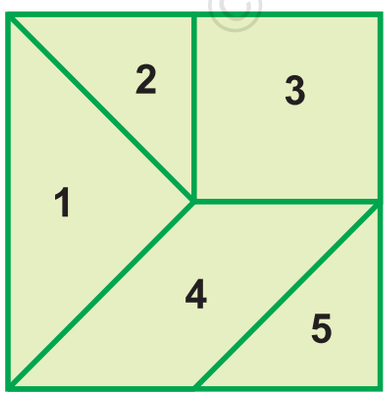
Activity 1. Dot-Grid

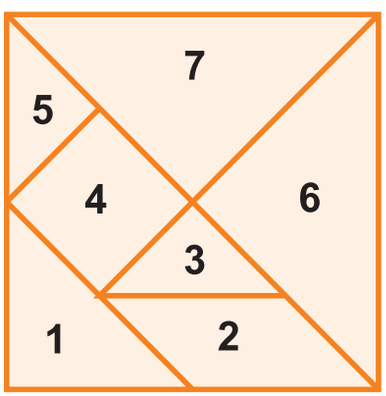
Shown below is a dot grid with some incomplete figures drawn on it. Complete these figures to make squares and rectangles by drawing just two lines in each figure.



Activity 2. Tangram

The tangram is an old Chinese puzzle, consisting of a square broken up into various geometrical shapes. There are two types of tangram—a 5-piece tangram and a 7-piece tangram. Both of them are shown below:

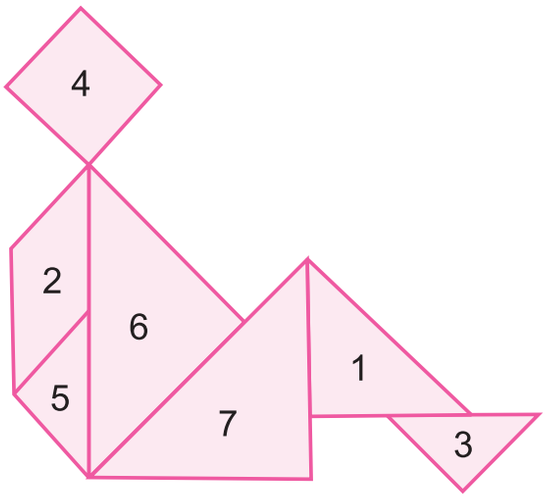


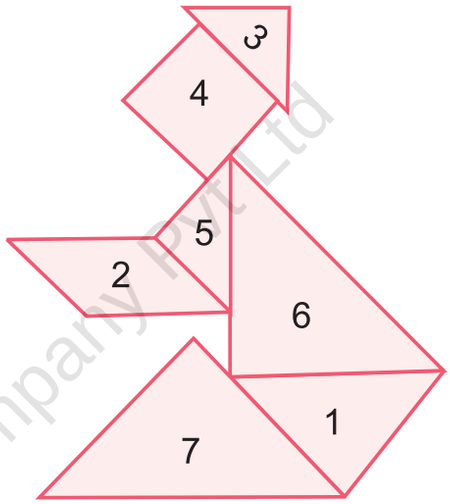


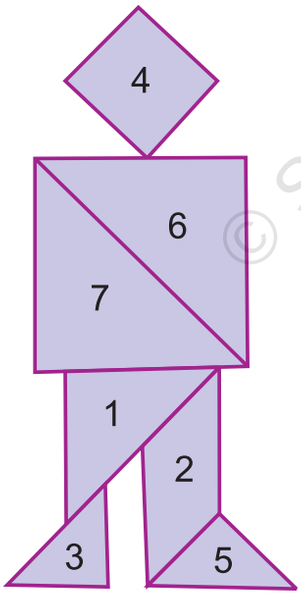
From the pieces of the tangram, we can make shapes of animals, people and things.

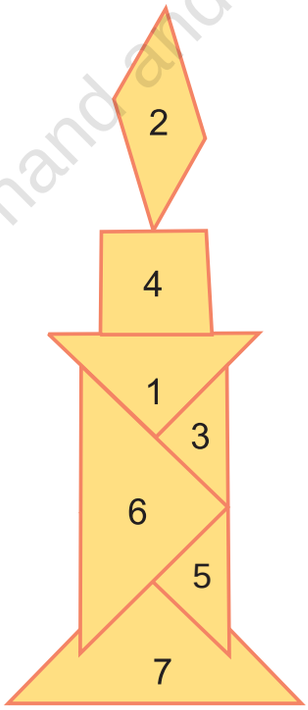
Two 7-piece tangrams have been given on the last page of the book. Cut out all the 7 pieces of one tangram separately. Place them on a hardboard and trace the outline of each piece with a pencil. Now, cut-out these shapes from the hardboard. Paste the cut-out pieces of the tangram on their respective hardboards. Now, cut out the pieces of the second tangram and paste them on the opposite sides of their respective hardboards.

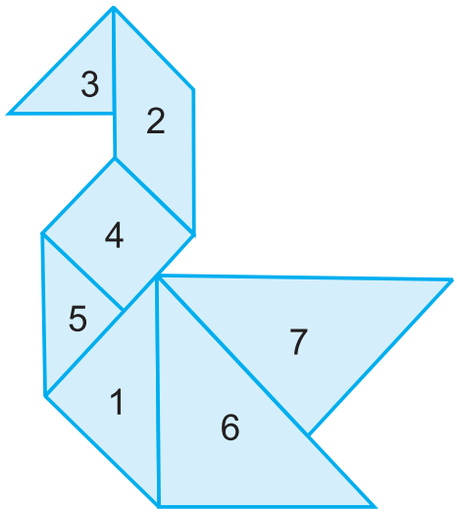
Use these pieces to form different shapes as shown below:









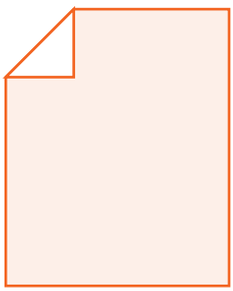


Try making some more similar shapes using this tangram.

1. Can you form a square using pieces 6 and 7?
2. Can you form a square using pieces 1, 2, 3, 4 and 5?
3. Can you form a rectangle using pieces 1, 2, 3 and 5?

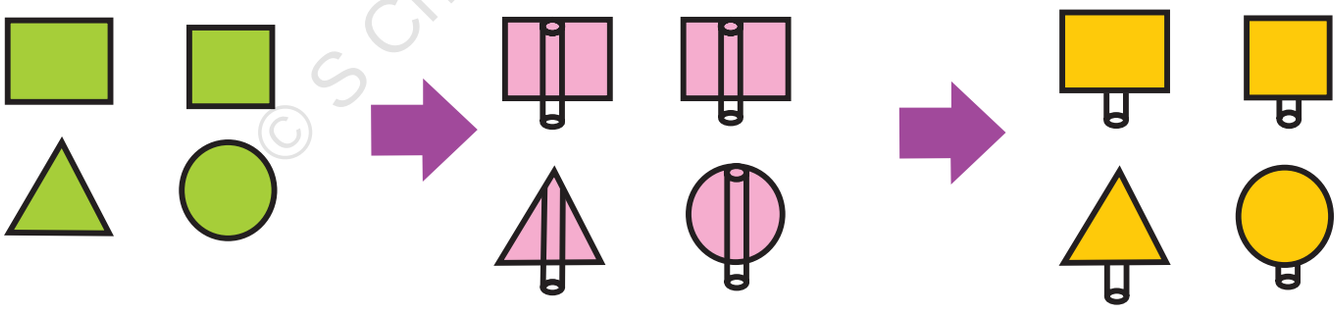
Activity 3. Edges and Corners

1. Take a rectangular sheet of paper.
   How many corners and edges does it have?
2. Fold one of its corners.
   How many corners and edges does it have now?
3. How many corners and edges will you get by folding two opposite corners of the sheet of paper?
4. Can you fold this paper in such a way that it has only three corners? You are allowed only two folds. What shape will you get?
5. Repeat the above activity with a square sheet of paper.
6. Can you fold all the corners of the square sheet in such a way that the number of corners remain unchanged?



Activity 4. (Class Activity)

Take a cardboard sheet and cut out from it the shapes of a square, a rectangle, a triangle and a circle. Now, fix a thin straw along the middle line on each of these shapes and then cover each of them with a glazed paper.



Mount each of these shapes on a battery-powered rotating motor and turn on the switch so that the shape rotates about the straw. What do you observe?

You will find that a rectangle and a square, on rotation generate a cylinder; a triangle generates a cone and a circle generates a sphere.

Assessment 14

QUESTION BAG 1

(Objective Type Questions)

Tick (✓) the correct answer.

1. Which of the following has no end point?

(a) Line ☐ (b) Line segment ☐

(c) Ray ☐ (d) None of these ☐

2. Which of the following has a definite length?

(a) Line Segment ☐ (b) Ray ☐

(c) Line ☐ (d) Both (a) and (b) ☐

3. A cuboid has ..... vertices, ... faces and . ..... edges.

(a) 6, 8, 8 ☐ (b) 8, 6, 12 ☐ (c) 6, 6, 10 ☐ (d) 6, 8, 12 ☐

4. Choose the odd one out.

(a) Rectangle ☐ (b) Triangle ☐ (c) Circle ☐ (d) Square ☐

5. Which of the following statements is not correct?

(a) A line segment is a part of a line. ☐

(b) Every rectangle is a quadrilateral. ☐

(c) Every square is a rectangle. ☐

(d) A sphere has just one edge. ☐

6. Which of the following solid shapes has no vertex?

(a) Cylinder ☐ (b) Sphere ☐

(c) Cone ☐ (d) Both (a) and (b) ☐

7. Choose the incorrect statement.

(a) Line AB is the same as line BA. ☐

(b) Line segment AB is the same as line segment BA. ☐

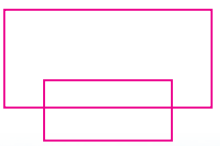
(c) Ray AB is the same as ray BA. ☐

(d) All are correct. ☐

8. What is the maximum number of rectangles that you can count in the adjacent figure?

(a) 2 ☐ (b) 3 ☐

(c) 4 ☐ (d) 6 ☐



9. How many edges does a cylinder have?

(a) 0 ☐ (b) 2 ☐ (c) 3 ☐ (d) 4 ☐

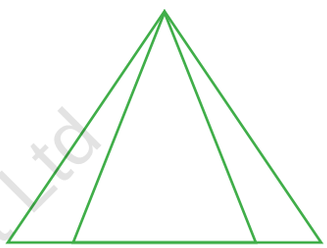
10. Which of the following solids will roll down an inclined plane?

(a) Cylinder ☐ (b) Cuboid ☐ (c) Cube ☐ (d) Cone ☐

11. Choose the odd one out.

(a) Circle ☐ (b) Cone ☐ (c) Cylinder ☐ (d) Sphere ☐

12. What is the maximum number of triangles that you can count in the adjacent figure?



(a) 3 ☐ (b) 4 ☐

(c) 5 ☐ (d) 6 ☐

QUESTION BAG 2

1. Match the following.

(A)	Line	(a)	Dice
(B)	Line segment	(b)	No definite length
(C)	Ray	(c)	One curved face
(D)	Cuboid	(d)	Has one end-point
(E)	Cube	(e)	Can be drawn on paper
(F)	Cylinder	(f)	One vertex
(G)	Cone	(g)	Match-box
(H)	Sphere	(h)	2 circular edges

2. Name a solid shape.

(a) with one edge .....

(b) with 3 faces .....

(c) with one vertex .....

(d) with 2 edges .....

(e) with one face .....

(f) with no vertex .....

3. Answer the following questions.

(a) Does a cylinder have any straight edge?

(b) How many vertices does a cylinder have?

(c) Does a sphere have any edge?

(d) Can a triangle have all sides different in length?

(e) Can a rectangle have all sides different in length?

(f) How many corners are there in a cuboid?

4. Fill in the blanks.

(a) Two line segments intersect at a ..... .

(b) A ..... has all 4 sides equal.

(c) The shape of the earth is a ..... .

(d) ..... edges of a cuboid meet at each of its vertices.

(e) Two adjacent faces of a solid shape meet at a/an ..... .

(f) Two adjacent sides of a plane figure meet at a ..... called the ..... .

(g) A cuboid has ..... pairs of identical faces.

5. State whether each of the following statements is true or false.

(a) One and only one line can be drawn to pass through two given points ..... .

(b) All the edges of a cuboid are equal ..... .

(c) A cuboid has 8 faces ..... .

(d) A sphere has one face, a cone has 2 faces and a cylinder has 3 faces ..... .

(e) A line segment is the shortest distance between two points on a paper ..... .

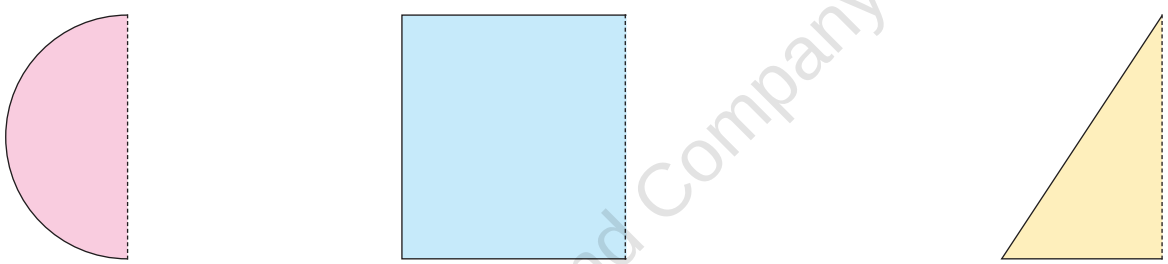
17 Symmetry: Basic Idea

Introduction

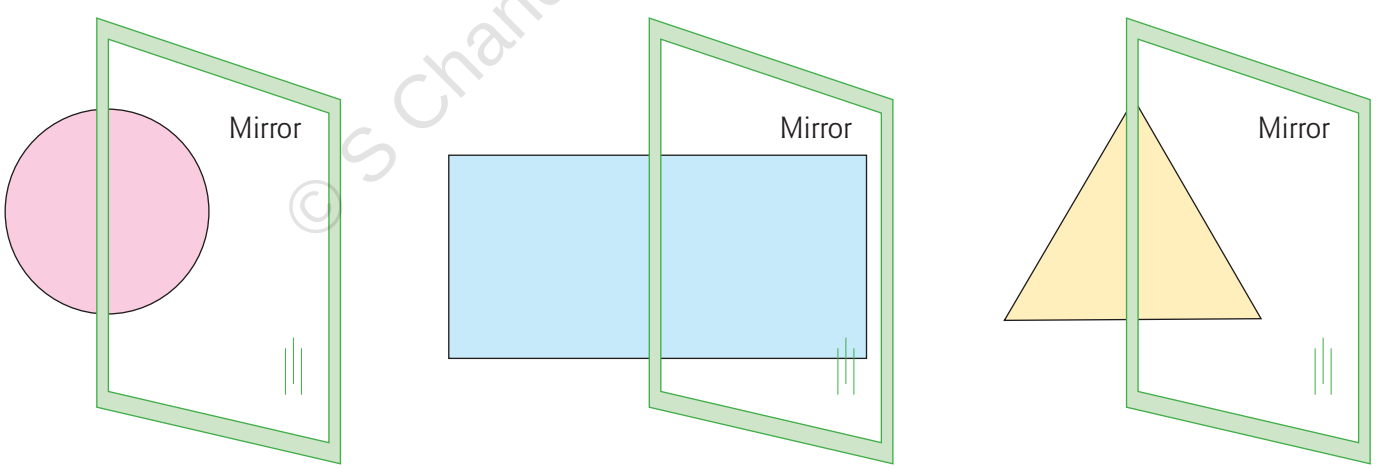
Draw the following shapes on paper and cut them out along the boundary.

Fold each figure along the dotted line. What do you observe?

Clearly, the parts lie exactly one above the other as shown below.



Now, stick the folded parts together. Place each piece on the table and then place a mirror along the dotted line:



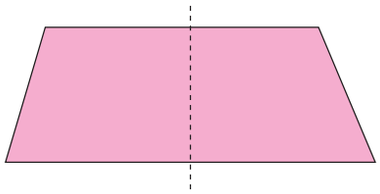
Look into the mirror. What do you observe?

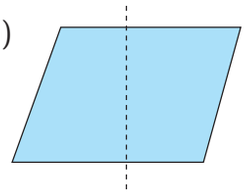
Clearly, the figure inside and outside the mirror are the same and the two together form a complete shape we had made above.

Such figures which can be divided into two exactly identical parts are said to be symmetrical about the dividing line.

Exercise 66

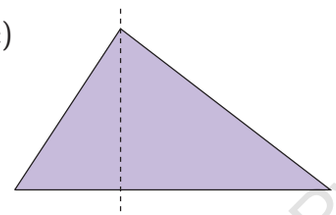
1. Look at the pictures given below. Does the dotted line divide each picture into two similar halves?

(a) 

(b) 

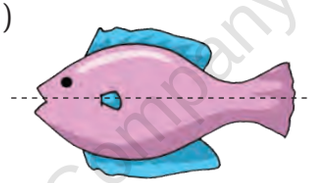
(c) 

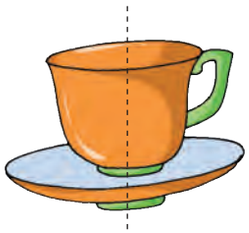
(d) 

(e) 

(f) 

(g) 

(h) 

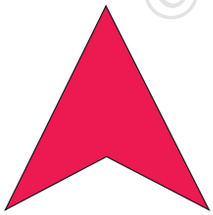
(i) 

2. Using a dotted line, can you divide the following pictures into two similar halves?

(a) 

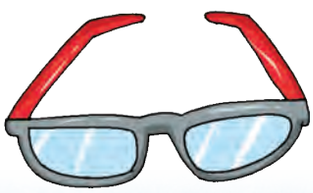
(b) 

(c) 

(d) 

(e) 

(f) 

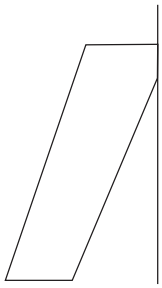
(g) 

(h) 

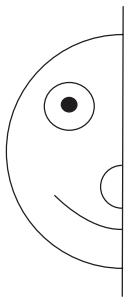
(i) 

3. Complete each of the following pictures by drawing an exactly same pattern on the other side of the line.

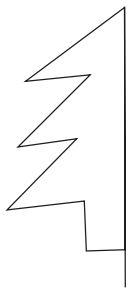
(a)



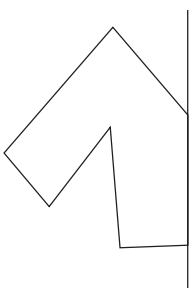
(b)



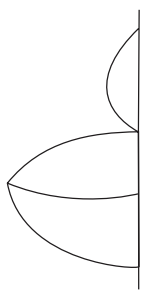
(c)



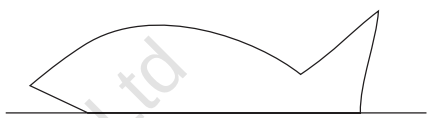
(d)



(e)



(f)



4. Guess each of the following words by looking at their halves.

(a)

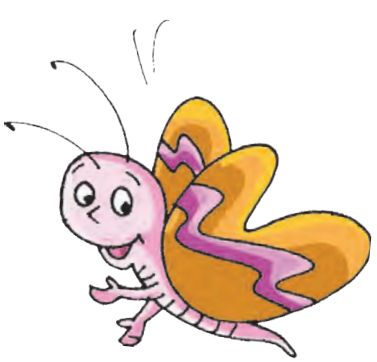
(b)

(c)

(d)

(e)

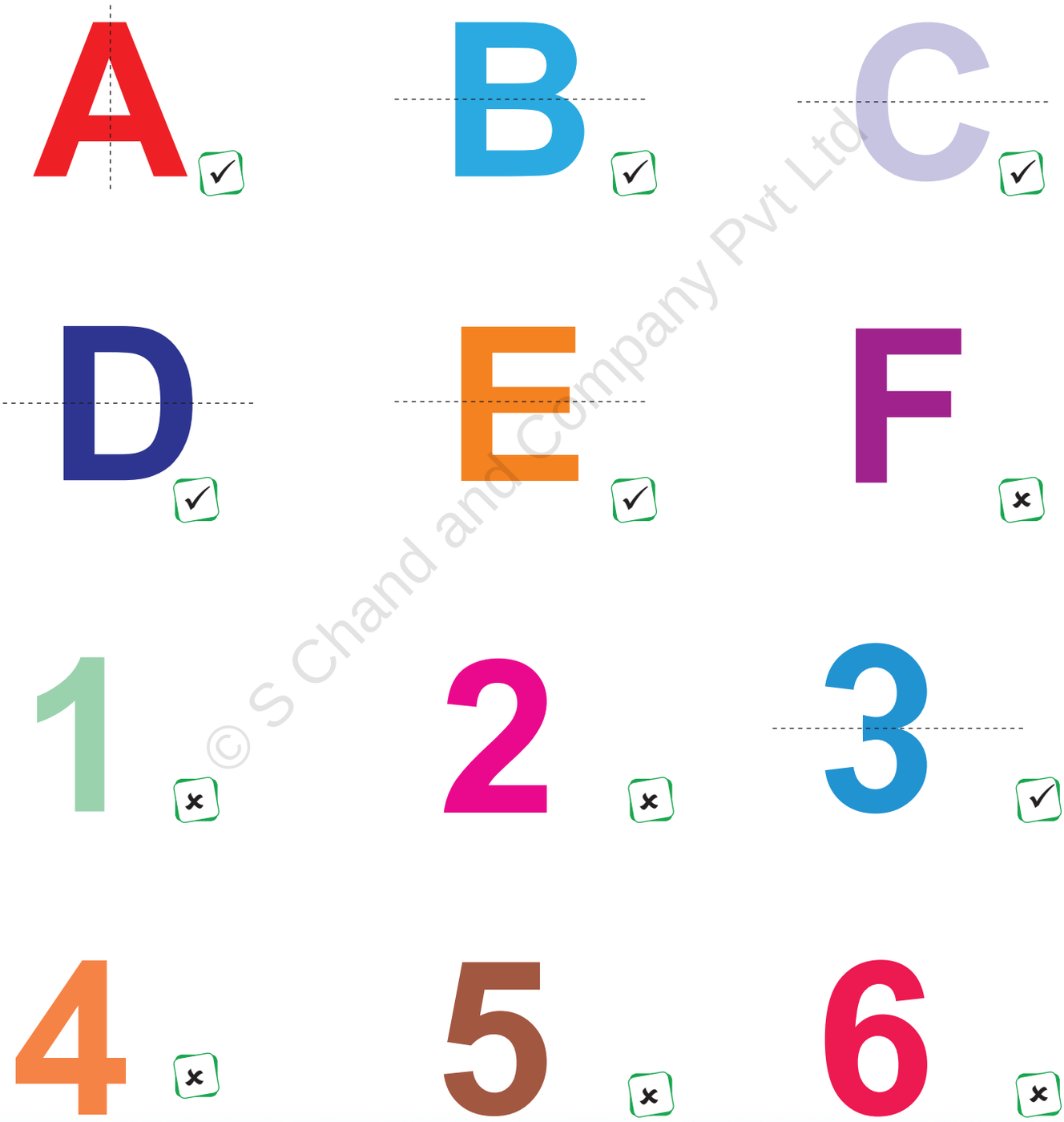
(f)



Activity Time

Prepare a chart of English capital letters (A to Z) and numerals from 0 to 9. Try dividing each letter and numeral into two similar mirror halves by drawing a line. Tick (✓) the character which can be divided into two identical halves and cross (✗) the ones which cannot.

Consider the following examples.



18 Pictograph

We may study various factors and collect information on different subjects in our daily life.

Let us consider some of these subjects.

1. Number of girls in different classes in a school
2. Number of boys of a class, playing different games
3. Number of cows in different villages
4. Number of toys with different boys
5. Number of different animals in a zoo

We may collect information on all these subjects by counting.

The information on subject 1 will have names of different classes, and the number of girls in each of them.

The information on subject 2 will have names of different games, and the number of boys playing each of them.

The information on subject 3 will have names of different villages, and the number of cows in each of them.

The information on subject 4 will have names of different boys, and the number of toys that each of them has.

The information on subject 5 will have names of different animals, and the number of each of them in the zoo.

Such information, which we collect on a subject, are called data.

Thus, we define data as a collection of facts and figures.

We may represent a data by tables, pictures or graphs.

When we make use of picture symbols to represent information, we call it pictorial representation or pictograph of the given information (data).

Drawing a Pictograph for a Given Information

Given below is the information about the number of boys, who like different fruits.

Apple	Orange	Banana	Pear	Guava
6	4	2	7	1

Let us draw a pictograph for this data. The numbers in the given table show the number of boys. So, we use the figure of a boy to represent the information.

We get a pictograph as shown below.

Number of Boys Liking Different Fruits

Apple	
Orange	
Banana	
Pear	
Guava	

Now, consider the following information about the number of absentees (boys and girls) in a class on various days of a week.

Days	Number of Absentees	
	Boys	Girls
Monday	1	2
Tuesday	2	0
Wednesday	1	1
Thursday	2	1
Friday	0	2

Let us use the figure of the face of a boy to represent a boy and the face of a girl to represent a girl.

We, then, get a pictograph as shown on next page.

Number of Absentees on Various Days of a Week

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Sometimes, the numbers in the data are large and it is not possible to draw so many figures.

In such cases, we use one picture or symbol to represent a specific number of objects. The number of persons or objects that each picture or symbol represents is indicated as the key just below the pictograph.

Given below is the information about 240 boys of a school, who play different games.

Football	Cricket	Volley-ball	Basket-ball	Badminton
60	80	30	50	20

It is difficult to draw 60 or 80 figures. So, we use one figure to represent 10 boys.

Thus, we have the pictograph shown below.

Number of Boys Playing Different Games

Football	
Cricket	
Volley-ball	
Basket-ball	
Badminton	

One  represents 10 boys.

Exercise 67

1. Given below is the information about number of toys owned by five students.

Sajal	Anshuman	Kartik	Preeti	Sanjana
8	2	7	4	6

Represent the above information by a pictograph.

2. The following information shows the number of different kinds of animals in a zoo.

Monkey	Giraffe	Lion	Elephant	Deer
9	2	3	6	5

Represent the above data by a pictograph.

3. The following information shows the number of different kinds of vehicles in a parking-lot.

Buses	Cars	Scooters	Motorcycles	Bicycles
10	60	20	40	30

Represent the above data by a pictograph.

4. The table given below shows the number of bottles of different brands of cold-drinks sold by a shopkeeper on a certain day.

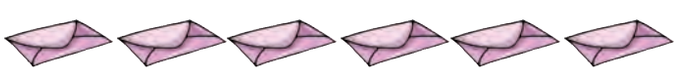
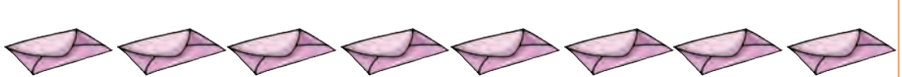
Fanta	Slice	Coke	Limca	Sprite
15	25	30	5	20

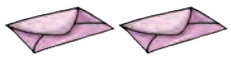
Represent the above data by a pictograph.

Reading and Interpreting a Pictograph

Study the following examples.

Example 1: The pictograph given below shows the number of letters received by Mr Roy on various days of a week. Read the pictograph and answer the following questions.

Monday	
Tuesday	
Wednesday	

Thursday	
Friday	
Saturday	

(a) On which day did Mr Roy receive the maximum number of letters?

(b) On which day did Mr Roy receive no letter?

(c) How many letters were received by Mr Roy on Saturday?

(d) How many letters were received by Mr Roy during the whole week?

Solution: (a) Seeing the pictograph, we find that the maximum number of letters received by Mr Roy is 8, on Wednesday.

So, Mr Roy received the maximum number of letters on Wednesday.

(b) In the pictograph, we can observe that no letter has been shown against Thursday.

So, Mr Roy did not receive any letter on Thursday.

(c) In the pictograph, 5 letters have been shown against Saturday.

So, Mr Roy received 5 letters on Saturday.

(d) Clearly, total number of letters received by Mr Roy during the whole week

Mon. Tue. Wed. Thu. Fri. Sat.

$= 6 + 3 + 8 + 0 + 2 + 5 = 24.$

Example 2: Below is given a pictograph showing the number of students of a class liking different food items.

Pizza	
Dosa	
Burger	
Pasta	
Sandwich	
Chips	

One  represents 2 students.

Study the given pictograph on previous page and answer the following questions.

(a) How many students like Pizza?

(b) Which food item is most popular among the students of the class? How many students like it?

(c) Which food item is least popular ? How many students like it?

(d) Which food item is liked by 8 students only?

(e) How many students are there in the class?

Solution: (a) Clearly, number of students who like pizza

= (Number of ) × 2 = 5 × 2 = 10.

(b) The most popular food item will be the one which has maximum number of  .

Such a food item is Burger which has six  .

Number of students who like Burger = (6 × 2) = 12.

∴ The most popular food item is Burger and it is liked by 12 students.

(c) The least popular food item will be the one which has least number of  .

Such a food item is Dosa, which has one  .

Number of students who like Dosa = (1× 2) = 2.

∴ The least popular food item is Dosa and it is liked by 2 students.

(d) 8 students are represented by (8 ÷ 2) = 4  .

The food item having four  is Sandwich.

∴ Sandwich is liked by 8 students only.

(e) Number of students in the class

= (Total number of  in the pictograph) × 2

= (5 + 1 + 6 + 2 + 4 + 3) × 2

= 21 × 2 = 42.

Exercise 68

1. The following pictograph shows the number of girls who are fond of reading different fairy-tales.

Thumbelina	
Cinderella	
Hansel & Gretel	
Little Red Riding Hood	
Pinnochio	

Read the above pictograph and answer the questions given below:

(a) Which fairy-tale is most popular among the girls?

(b) How many girls love to read Cinderella?

(c) Which fairy-tale is least liked by the girls?

2. The following pictograph shows the number of different kinds of musical instruments in a shop.

Guitar	
Harmonium	
Violin	
Drum	
Sitar	

Read the above pictograph and answer the questions given below:

(a) Which musical instrument is in greatest demand?

(b) The number of which two musical instruments together equal the number of guitars in the shop?

(c) Which musical instrument is available in least number in the shop?

3. The pictograph shown below shows the number of students in a library, reading different kinds of books.

Story	
Comic	
Magazine	
Novel	
Poetry	

Read the above pictograph and answer the questions:

(a) How many students are there in the library?

(b) What is the difference between the number of students reading comics and those reading novels?

(c) Which type of books is read by the maximum number of students?

4. The following pictograph shows the number of fruits bought by a fruit vendor from a wholesale merchant.

Apple	
Mango	
Banana	
Pineapple	
Guava	
Pear	

Each picture represents 5 fruits

Study the above pictograph carefully and answer the following questions.

(a) How many different kinds of fruits did the vendor buy?

(b) Which fruit did he buy in least number?

(c) How many bananas did the vendor buy?

(d) How many guavas did he buy?

(e) How many more apples did he buy than mangoes?

(f) How many fruits did he buy in all?

Collecting Data Using Tally Marks

Suppose we have a row of 30 boys, who like different games— Cricket, Hockey, Football, Chess and Badminton.

We go on asking each boy his choice of games and recording the collected information.

In such a case, we prepare a table containing the available choices.

Then, for each boy we mark a vertical line called tally mark against his particular choice.

Once we have a set of four tally marks for a certain choice, then we indicate the fifth mark by crossing the four tally marks. We then start with a new set of tally marks.

Suppose the number of boys liking different games are as given below:

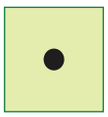
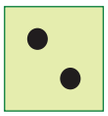
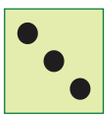
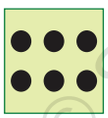
Cricket	Hockey	Football	Chess	Badminton
8	5	7	6	4

The above information may be collected as under:

Game	Tally marks	Number of boys
Cricket	𝍸 | | |	8
Hockey	𝍸	5
Football	𝍸 | |	7
Chess	𝍸 |	6
Badminton	| | | |	4

Activity Time

1. Take a die and throw it 40 times. Record your output at each throw of the die, by drawing a tally mark in front of the number of dots you get. Make a table as shown below:

Face of the die	Tally Marks	Number of times
		
		
		
		
		
		

(a) Which face of the die did you get the most number of times?

(b) Which face of the die did you get the least number of times?

2. Ask each of your classmates about the mode of transport he/she uses to come to school. Then make a table as in the above activity, using the heads: Mode of transport, Tally marks and number of students.

(a) Which is the most popular mode of transport among your classmates?

(b) Which mode of transport is the least popular?

ANSWERS

Exercise 1

1. (a) One hundred seventeen (b) Two hundred forty-five (c) Six hundred ninety-six
(d) Eight hundred thirty-nine (e) Nine hundred eighty-seven (f) Seven hundred seventeen
(g) Five hundred thirty-four (h) Nine hundred ninety-nine

2. (a) 159 (b) 212 (c) 960 (d) 609 (e) 810 (f) 316 (g) 770

3. (a) 294, 296, 298, 300, 302, 304, 306 (b) 314, 324, 334, 344, 354, 364, 374 (c) 544, 547, 550, 553, 556, 559, 562
(d) 680, 685, 690, 695, 700, 705, 710 (e) 825, 845, 865, 885, 905, 925, 945

4. 491, 493, 495, 497, 499, 501, 503, 505 **5.** 181, 184, 187, 190, 193, 196, 199

6. 708, 713, 718, 723, 728, 733 **7.** 791, 811, 831, 851, 871, 891, 911

8. (a) 600 + 90 + 3 (b) 900 + 10 + 1 (c) 300 + 60 + 0 (d) 800 + 0 + 5 (e) 700 + 70 + 7

9. (a) 267 (b) 569 (c) 604 (d) 123 (e) 999 (f) 790
(g) 538 (h) 803 (i) 219 (j) 350 (k) 407

10. (a) 9 (b) 1 (c) 10 (d) 99 (e) 100 (f) 999

11. (a) 10 (b) 90 (c) 900

12. (a) > (b) < (c) < (d) < (e) < (f) <
(g) > (h) < (i) <

13. (a) 770 (b) 965 (c) 543 (d) 990 (e) 876 (f) 976

14. (a) 39, 93, 169, 196, 619, 961 (b) 96, 609, 690, 906, 960, 996 (c) 37, 75, 307, 375, 537, 735
(d) 333, 530, 553, 633, 703, 773 (e) 446, 468, 648, 668, 846, 864 (f) 45, 54, 405, 450, 504, 540

15. (a) 543, 435, 405, 345, 45, 34 (b) 651, 535, 354, 165, 156, 65 (c) 741, 714, 471, 417, 174, 147
(d) 901, 190, 109, 91, 90, 19 (e) 873, 837, 783, 738, 387, 378 (f) 217, 185, 172, 135, 107, 59

16. (a) 90 (b) 7 (c) 100 (d) 40 (e) 9 (f) 60
(g) 400 (h) 70

17. 389, 398, 839, 893, 938, 983 **18.** 207, 270, 702, 720 **19.** 100 **20.** 92 **21.** 85

22. 135 **23.** 103 **24.** 118 **25.** 149 **26.** 115 **27.** 923

28. 952 **29.** 707 **30.** 800 **31.** 881 **32.** 707 **33.** 930

34. 914 **35.** 736 **36.** 696 **37.** 704 **38.** 829 **39.** 761

40. 702 **41.** 872 **42.** 650 **43.** 507 **44.** 968 **45.** 389

46. 528 **47.** 725 **48.** 14 **49.** 27 **50.** 32 **51.** 39

52. 26 **53.** 278 **54.** 289 **55.** 313 **56.** 313 **57.** 382

58. 236 **59.** 167 **60.** 239 **61.** 228 **62.** 191 **63.** 179

64. 472 **65.** 189 **66.** 938 **67.** 458 **68.** 872 **69.** 418

70. 288 **71.** 224 **72.** (a) 24 (b) 36 (c) 36 (d) 18
(e) 20 (f) 64 (g) 42 (h) 35 (i) 72

73. (a) 15 (b) 19 (c) 0 (d) 0 (e) 3 (f) 10
(g) 9 (h) 4

74. 56 **75.** 54 **76.** 14 years **77.** 4 **78.** 80

79. (a) 42 ÷ 6 = 7; 42 ÷ 7 = 6 (b) 20 ÷ 5 = 4, 20 ÷ 4 = 5 (c) 63 ÷ 7 = 9, 63 ÷ 9 = 7
(d) 16 ÷ 2 = 8, 16 ÷ 8 = 2 (e) 27 ÷ 3 = 9, 27 ÷ 9 = 3 (f) 56 ÷ 8 = 7, 56 ÷ 7 = 8

80. (a) 2 × 5 = 10 (b) 9 × 6 = 54 (c) 3 × 10 = 30

81. 9 toffees **82.** 7 cars **83.** 8 oranges

84. (a) 5 (b) 2 (c) 5 (d) 4 (e) 10 **85.** ₹ 67

86. (a) 9:00; 9 o'clock (b) 2:00; 2 o'clock (c) 11:00; 11 o'clock

87. (a) Cuboid (b) Cylinder (c) Sphere (d) Cone (e) Cube (f) Cylinder
(g) Cylinder (h) Cone (i) Cylinder (j) Cylinder (k) Cuboid (l) Sphere

Exercise 2

1. 4315; Four thousand three hundred fifteen
2. 1327; One thousand three hundred twenty-seven
3. 3105; Three thousand one hundred five
4. 6034; Six thousand thirty-four
5. 5740; Five thousand seven hundred forty
6. 2003; Two thousand three
7. 3500; Three thousand five hundred
8. 2642; Two thousand six hundred forty-two

10. (a) 6237 (b) 8592 (c) 1379 (d) 5980 (e) 3413 (f) 4703
(g) 9205 (h) 2067 (i) 1030 (j) 5018 (k) 9009 (l) 3010
(m) 2003

11. (a) 3, 5, 7, 8 (b) 5, 3, 4, 7 (c) 7, 2, 0, 6 (d) 4, 0, 1, 9 (e) 8, 9, 6, 0 (f) 1, 8, 0, 0
(g) 7, 0, 7, 0 (h) 3, 0, 0, 3

12. (a) Four thousand six hundred eighty-seven
(b) Two thousand eight hundred sixty-nine
(c) Six thousand three hundred eighty
(d) Seven thousand five hundred thirteen
(e) One thousand twenty-nine
(f) Eight thousand fifteen
(g) Nine thousand four hundred six
(h) Six thousand seven hundred
(I) Five thousand two
(j) Four thousand four
(k) Eight thousand seventy
(l) Nine thousand twenty-one

13. (a) 5080, 5081, 5082, 5083 (b) 6299, 6300, 6301, 6302 (c) 1000, 1001, 1002, 1003 (d) 7010, 7011, 7012, 7013

Exercise 3

1. 9 **2.** 30 **3.** Face value = 6, Place value = 6 **4.** 0 **5.** 700
6. 9000 **7.** 4000 **8.** 198 **9.** 950 **10.** 495

11.

Digit	1	5	8	6
Place-value	1	50	800	6000

12.

Digit	6	2	1	4
Place-value	6	20	100	4000

13.

Digit	5	1	0	3
Place-value	5	10	0	3000

14. (a) 1576 = 1000 + 500 + 70 + 6 (b) 8019 = 8000 + 10 + 9 (c) 3291 = 3000 + 200 + 90 + 1
(d) 7002 = 7000 + 2 (e) 3205 = 3000 + 200 + 5 (f) 6027 = 6000 + 20 + 7
(g) 9157 = 9000 + 100 + 50 + 7 (h) 2800 = 2000 + 800

15. (a) 5243 (b) 9417 (c) 7168 (d) 6350 (e) 4056 (f) 3702
(g) 1101 (h) 2035

16. (a) 1235 (b) 4756 (c) 7862 (d) 5019 (e) 6105 (f) 8001

17. (a) 569 (b) 1000 (c) 1270 (d) 2632 (e) 1100 (f) 5110
(g) 6800 (h) 8890 (i) 7001 (j) 9100

18. (a) 699 (b) 866 (c) 999 (d) 2199 (e) 5309 (f) 4079
(g) 4399 (h) 7999 (i) 7519 (j) 9609

19. (a) 3294, 3296, 3298, 3300, 3302, 3304
(b) 7587, 7589, 7591, 7593, 7595, 7597, 7599, 7601
(c) 995, 997, 999, 1001, 1003, 1005, 1007, 1009, 1011

20. (a) 4880, 4890, 4900, 4910, 4920, 4930, 4940
(b) 7887, 7897, 7907, 7917, 7927, 7937
(c) 8993, 9003, 9013, 9023, 9033, 9043, 9053

21. (a) 3790, 3890, 3990, 4090, 4190, 4290, 4390, 4490
(b) 4999, 5099, 5199, 5299, 5399, 5499
(c) 5801, 5901, 6001, 6101, 6201, 6301

22. (a) 2578, 3578, 4578, 5578, 6578 (b) 4609, 5609, 6609, 7609, 8609, 9609

23. (a) 4299, 4300, 4301, 4302, 4303 (b) 5099, 5101, 5103, 5105, 5107 (c) 8209, 8219, 8229, 8239, 8249

(d) 4007, 4107, 4207, 4307, 4407 (e) 4590, 4589, 4588, 4587, 4586 (f) 7199, 7197, 7195, 7193, 7191
(g) 9301, 9291, 9281, 9271, 9261 (h) 6101, 6001, 5901, 5801, 5701

24. (a) 0 (b) 9 (c) 700 (d) more (e) less (f) 0
(g) largest (h) largest

Exercise 4

1. (a) > (b) < (c) < (d) < (e) < (f) < (g) >
(h) > (i) < (j) < (k) < (l) < (m) < (n) <

2. (a) 6435 (b) 4320 (c) 6521 (d) 8429 (e) 6510 (f) 9691

3. (a) 5077 (b) 3460 (c) 301 (d) 2563 (e) 4289 (f) 1357

4. (a) 324, 342, 432, 3042, 4032, 4320
(b) 563, 635, 3546, 4356, 4635, 5436
(c) 396, 639, 963, 2673, 5762, 6326
(d) 571, 1001, 1375, 1573, 2003, 3157
(e) 3496, 3694, 4639, 4963, 6349, 6493
(f) 199, 1009, 1090, 1099, 1909, 1990
(g) 908, 1008, 3508, 5308, 8305, 8503

5. (a) 1110, 1100, 1011, 1001, 101
(b) 3602, 3062, 2306, 1206, 402, 203
(c) 5203, 4256, 3052, 659, 596, 163
(d) 5217, 2571, 2175, 1725, 1527, 1275
(e) 7612, 7216, 7162, 7126, 6721, 6127
(f) 5403, 5304, 5043, 5034, 3504, 3405
(g) 6152, 5261, 2651, 2156, 1625, 1516

6. 740, 704, 470, 407

7. 8630, 8603, 8360, 8306, 8036, 8063

8. (a) 8753 (b) 6420 (c) 9520

9. (a) 1246 (b) 4058 (c) 3059

ASSESSMENT 1

Question bag 1

1. (b) **2.** (b) **3.** (a) **4.** (c) **5.** (b) **6.** (d) **7.** (c) **8.** (a) **9.** (a) **10.** (c)
11. (a) **12.** (c) **13.** (d) **14.** (c) **15.** (c) **16.** (b) **17.** (d) **18.** (c) **19.** (b) **20.** (c)

Question bag 2

1. (a) 253, 83 (b) 9584, 9640 (c) 617, 15, 910 (d) 3561, 2571, 503

2. (a) One thousand two hundred nineteen (b) Eight thousand fifteen (c) Five thousand one hundred two
(d) Seven thousand three (e) Nine thousand eight hundred thirty-five (f) Six thousand five hundred fifty-four
(g) Nine thousand nine hundred ninety-nine (h) One thousand eleven

3. (a) 1 (b) 1 (c) 1 (d) 10

4. (a) 8196, 8200, 8202 (b) 7785, 7790, 7800 (c) 9090, 9110, 9130 (d) 5575, 5600, 5650

5. (a) 600 (b) 2 (c) 70 (d) 4000 (e) 1000 (f) 600

6. (a) P → 2999, S →3001 (b) P → 2753, S → 2755 (c) P → 5648, S → 5650
(d) P → 1008, S → 1010 (e) P → 6764, S → 6766 (f) P → 9088, S → 9090

7. 9998, 10000

8. (a) False (b) True (c) True

9. (a) > (b) > (c) < (d) > (e) < (f) <
(g) < (h) <

10. (a) 5009, 5090, 5099, 5900, 5909 (b) 9091, 9109, 9190, 9901, 9910

11. (a) 9651, 1569 (b) 9730, 3079 (c) 9872, 2789 (d) 9640, 4069

12. (a) 9998 (b) 1001 **13.** (a) 9876 (b) 1023

Exercise 5

1. (a) VI (b) VIII (c) XII (d) XIV (e) XXVI (f) XXVIII
(g) XXXIII (h) XXXIV (i) XXXVIII (j) XXXIX

2. (a) 9 (b) 16 (c) 26 (d) 19 (e) 36 (f) 28
(g) 13 (h) 29 (i) 18 (j) 20

3. (a) > (b) > (c) = (d) > (e) < (f) =

4. (b), (c), (e), (g) and (h)

5. (a) XXII (b) X (c) XXV (d) VI (e) VIII (f) IX

ASSESSMENT 2

Question bag 1

1. (a) **2.** (c) **3.** (c) **4.** (b) **5.** (c) **6.** (d)

7. (a) **8.** (a) **9.** (c) **10.** (b) **11.** (a) **12.** (b)

Question bag 2

1. 26 → XXVI, 17 → XVII, 39 → XXXIX, 29 → XXIX, 13 → XIII, 14 → XIV

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

3. (a) XXIV (b) XXX (c) X (d) XIX

4. (a) XXIV, XXV, XXVII, XXVIII, XXIX (b) XVI, XVII, XVIII, XIX (c) XXXV, XXXVI, XXXVII, XXXIX, XL

5. (a) X (b) VI (c) XXIV (d) XII (e) XIV (f) XXIV

6. (a) L (b) V (c) XL

Exercise 6

1. 9878 **2.** 9989 **3.** 9988 **4.** 9889 **5.** 5878 **6.** 8899

7. 9783 **8.** 8777 **9.** 5979 **10.** 3889 **11.** 7988 **12.** 7989

13. 5798 **14.** 5999 **15.** 5988 **16.** 7999 **17.** 2567 **18.** 6599

19. 7999 **20.** 3598 **21.** 7888 **22.** 1689 **23.** 9483 **24.** 5899

Exercise 7

1. 9000 **2.** 9100 **3.** 8317 **4.** 9463 **5.** 7356 **6.** 8353

7. 9225 **8.** 9521 **9.** 7565 **10.** 9796 **11.** 9000 **12.** 9584

13. 9829 **14.** 8069 **15.** 7757 **16.** 8942 **17.** 5272 **18.** 6852

19. 4252 **20.** 4170 **21.** 9793 **22.** 6680 **23.** 5522 **24.** 9894

25.
$$\begin{array}{r} \boxed{2}\,4\,\boxed{5}\,3 \\ +\ 6\,\boxed{5}\,6\,\boxed{8} \\ \hline 9\,0\,2\,1 \end{array}$$

26.
$$\begin{array}{r} 5\,\boxed{7}\,8\,\boxed{7} \\ +\ 2\,3\,\boxed{7}\,9 \\ \hline 8\,1\,6\,6 \end{array}$$

27.
$$\begin{array}{r} 1\,3\,\boxed{4}\,\boxed{9} \\ +\ 7\,\boxed{9}\,6\,8 \\ \hline 9\,3\,1\,7 \end{array}$$

28.
$$\begin{array}{r} 6\,\boxed{2}\,\boxed{8}\,4 \\ +\ 1\,7\,9\,\boxed{8} \\ \hline \boxed{8}\,0\,8\,2 \end{array}$$

29.
$$\begin{array}{r} \boxed{3}\,2\,\boxed{8}\,7 \\ +\ 1\,8\,9\,\boxed{6} \\ \hline 5\,\boxed{1}\,8\,3 \end{array}$$

Exercise 8

1. 2357 **2.** 1831 **3.** 5137 **4.** 6397 **5.** 0 **6.** 0

7. 1008 **8.** 1650 **9.** 2346 **10.** 4375

11. (a) 200 (b) 200 (c) 900

Exercise 9

1. 4470 **2.** ₹ 9280 **3.** ₹ 5100 **4.** 8890 **5.** 4087 **6.** 8436

7. 8243 **8.** 9375 **9.** 9824 **10.** ₹ 8121 **11.** 9270 **12.** 6668

13. ₹ 7070

ASSESSMENT 3

Question bag 1

1. (c) **2.** (d) **3.** (a) **4.** (c) **5.** (d) **6.** (d) **7.** (d) **8.** (d)

9. (c) **10.** (b) **11.** (c) **12.** (b) **13.** (c) **14.** (c) **15.** (a)

Question bag 2

1. (a) 9 (b) 9 (c) 1 (d) 3, 10 (e) 30

2. (a) 3356 (b) 5900 (c) 3000 (d) 10000 (e) 3070 (f) 5000
(g) 10 (h) 1 (i) 100 (j) 100

3. (a) Even number (b) Odd number (c) Even number (d) Odd number

4. (a) Even (b) Odd (c) Odd (d) Even

5. (a) False (b) True (c) False

6. ₹ 6463 **7.** 8158 **8.** 2361

Exercise 10

1. 2413 **2.** 3233 **3.** 4532 **4.** 3324 **5.** 2235 **6.** 3202
7. 1325 **8.** 5430 **9.** 2222 **10.** 3305 **11.** 6220 **12.** 1215
13. 1332 **14.** 1325 **15.** 3003 **16.** 2313 **17.** 2223 **18.** 2310
19. 2112 **20.** 1111 **21.** 1111 **22.** 370 **23.** 454

Exercise 11

1. 366 **2.** 5889 **3.** 2887 **4.** 2317 **5.** 3112 **6.** 3358
7. 3766 **8.** 798 **9.** 2924 **10.** 625 **11.** 3002 **12.** 4182
13. 1845 **14.** 3887 **15.** 2834 **16.** 4618 **17.** 4323 **18.** 1742
19. 1758 **20.** 1364 **21.** 6323 **22.** 3168 **23.** 1218 **24.** 1432
25. 1798 **26.** 732 **27.** 756 **28.** 4047

29.
$$\begin{array}{r} 7\,\boxed{3}\,5\,6 \\ -\,2\,3\,\boxed{6}\,9 \\ \hline \boxed{4}\,9\,8\,\boxed{7} \end{array}$$

30.
$$\begin{array}{r} 5\,2\,\boxed{6}\,1 \\ -\,2\,\boxed{3}\,6\,4 \\ \hline 2\,8\,9\,\boxed{7} \end{array}$$

31.
$$\begin{array}{r} 8\,\boxed{3}\,6\,1 \\ -\,\boxed{4}\,5\,\boxed{7}\,8 \\ \hline 3\,7\,8\,3 \end{array}$$

Exercise 12

1. 1156 **2.** 1244 **3.** 2428 **4.** 3444 **5.** 1445 **6.** 5665
7. 1383 **8.** 1768 **9.** 887 **10.** 4776 **11.** 289 **12.** ₹ 1778
13. ₹ 1819 **14.** ₹ 1745 **15.** 1772 **16.** 329 km

ASSESSMENT 4

Question bag 1

1. (a) **2.** (a) **3.** (c) **4.** (b) **5.** (b) **6.** (a)
7. (c) **8.** (b) **9.** (a) **10.** (b) **11.** (d) **12.** (b)

Question bag 2

1. (a) 2077 (b) 2274 (c) 3167

2. (a) 0 (b) 8475 (c) 7420 (d) 1 (e) 4974 (f) 8985

3. (a) 5586 (b) 6260 (c) 100 (d) 10 (e) 8105 (f) 1000

4. (a) 25 (b) 80 (c) 70 (d) 100 (e) 17 (f) 3
(g) 21 (h) 5 (i) 20 (j) 5

5. (a) = (b) < (c) >

6. 4249 **7.** 486 **8.** 868 **9.** 785 **10.** Sajal, 676 **11.** 4776

Exercise 13

1. 2584 **2.** 1896 **3.** 1589 **4.** 6388 **5.** 2566 **6.** 1544
7. 2224 **8.** 1330 **9.** 2456 **10.** 1877 **11.** 3545 **12.** ₹ 2777
13. 1067 m **14.** ₹ 215 **15.** 859 **16.** 293 km **17.** 1918

Exercise 14

1. $1 \times 3 = 3$ **2.** $2 \times 3 = 6$ **3.** $4 \times 2 = 8$ **4.** $6 \times 2 = 12$ **5.** $2 \times 3 = 6$ **6.** $5 \times 3 = 15$
7. $3 \times 3 = 9$ **8.** $4 \times 3 = 12$ **9.** $4 \times 4 = 16$ **10.** $4 \times 5 = 20$

Exercise 15

1. 14 **2.** 27 **3.** 24 **4.** 18 **5.** 12 **6.** 24 **7.** 25 **8.** 56
9. 36 **10.** 48 **11.** 54 **12.** 63 **13.** 35 **14.** 49 **15.** 64

Exercise 16

1. 77 **2.** 84 **3.** 66 **4.** 96 **5.** 48 **6.** 90 **7.** 48 **8.** 87
9. 82 **10.** 69 **11.** 63 **12.** 28 **13.** 99 **14.** 26 **15.** 39

Exercise 17

1. 92 **2.** 94 **3.** 84 **4.** 76 **5.** 90 **6.** 84
7. 98 **8.** 54 **9.** 96 **10.** 80 **11.** 74 **12.** 91
13. 195 **14.** 204 **15.** 230 **16.** 234 **17.** 192 **18.** 177
19. 190 **20.** 378 **21.** 216 **22.** 215 **23.** 201 **24.** 225
25. 144 **26.** 153 **27.** 258 **28.** 196 **29.** 117 **30.** 192
31. 616 **32.** 441 **33.** 784 **34.** 846

Exercise 18

1. 60 **2.** 104 **3.** 84 **4.** 84 **5.** 108 **6.** 88 **7.** 91
8. 98 **9.** 120 **10.** 64 **11.** 135 **12.** 126 **13.** 112 **14.** 72
15. 95 **16.** 102 **17.** 133 **18.** 144 **19.** 152 **20.** 144 **21.** 140
22. (a) 20, 25, 30,35 (b) 40, 50, 60, 70 (c) 12, 15, 18, 21 (d) 28, 35, 42, 49 (e) 36, 45, 54, 63
(f) 60, 75, 90, 105 (g) 80, 100, 120, 140 (h) 44, 55, 66, 77 (i) 48, 60, 72, 84 (j) 68, 85, 102, 119

Exercise 19

1. 828 **2.** 396 **3.** 826 **4.** 840 **5.** 945 **6.** 676 **7.** 1072 **8.** 930
9. 828 **10.** 970 **11.** 864 **12.** 948 **13.** 3648 **14.** 3040 **15.** 5560 **16.** 3910
17. 5382 **18.** 5551 **19.** 5202 **20.** 6902 **21.** 8343

Exercise 20

1. 750 **2.** 3870 **3.** 6890 **4.** 1000 **5.** 2300 **6.** 3800
7. 7200 **8.** 8400 **9.** 6000 **10.** 4000 **11.** 7000 **12.** 6000
13. 1140 **14.** 2900 **15.** 2010 **16.** 2960 **17.** 2000 **18.** 2650
19. 3660 **20.** 1330 **21.** 5400 **22.** 4230 **23.** 6000 **24.** 7600
25. 6400 **26.** 6800 **27.** 8100 **28.** 8400 **29.** 9600 **30.** 9900

Exercise 21

1. 23 **2.** 19 **3.** 67 **4.** 84 **5.** 36 **6.** 27 **7.** 1 **8.** 1
9. 870 **10.** 986 **11.** 0 **12.** 0 **13.** 8 **14.** 6 **15.** 8 **16.** 7
17. 7 **18.** 6 **19.** 20 **20.** 30, 9

Exercise 22

1. ₹ 40 **2.** 63 **3.** 72 **4.** ₹ 300 **5.** ₹ 540 **6.** 360 kg
7. 900 **8.** 720 **9.** 1280 **10.** 390 **11.** 2700 **12.** 1680
13. 2960 **14.** 7200 km **15.** 7000 **16.** 720 minutes

Exercise 23

1. 486 **2.** 1508 **3.** 2208 **4.** 2886 **5.** 3772 **6.** 5035
7. 5304 **8.** 4312 **9.** 8712 **10.** 8091 **11.** 5985 **12.** 8710
13. 9982 **14.** 8624 **15.** 7075 **16.** 7098 **17.** 7106 **18.** 4500
19. 6916 **20.** 8514 **21.** 8398 **22.** 6512 **23.** 6992 **24.** 9557
25. 9240 **26.** 9353 **27.** 8092 **28.** 5191

Exercise 24

1. 3600 **2.** 3504 **3.** 1560 **4.** 8910 **5.** ₹ 6750 **6.** 9648
7. 9472 **8.** ₹ 8220 **9.** 9856 **10.** 9860 **11.** 9072 **12.** 2875
13. ₹ 7056 **14.** 4867 **15.** 7958

ASSESSMENT 5

Question bag 1

1. (d) **2.** (c) **3.** (d) **4.** (d) **5.** (a) **6.** (c)
7. (c) **8.** (b) **9.** (d) **10.** (c) **11.** (d) **12.** (a)
13. (b) **14.** (d) **15.** (c) **16.** (a) **17.** (b) **18.** (d)

Question bag 2

1. (a) 63 (b) 66 (c) 96 (d) 64 (e) 117 (f) 70 (g) 144
(h) 54 (i) 76 (j) 105 (k) 102 (l) 128 (m) 162
2. (a) 8 (b) 7 (c) 7 (d) 7 (e) 14 (f) 6
(g) 13 (h) 15
3. (a) = (b) > (c) > (d) > (e) = (f) <
(g) = (h) = (i) < (j) =
4. (a) 480 (b) 280 (c) 350 (d) 180 (e) 270 (f) 160
(g) 420 (h) 450
5. (a) 923 (b) 0 (c) 8760 (d) 10 (e) 1770 (f) 8100 (g) 8796
(h) 100 (i) 6130 (j) 76 (k) 100 (l) 0 (m) 1
6. (a) 64 (b) 97 (c) 24 (d) 86 (e) 46 (f) 93
(g) 12 (h) 5 (i) 30 (j) 7
7. (a) 10 (b) 63 (c) 88. 5 (d) 70 (e) 100 (f) 87. 3
(g) 96 (h) 800
8. (a) 35 (b) 108 (c) 72 (d) 64 (e) 108 (f) 80
(g) 980 (h) 3360 (i) 42 (j) 1080 (k) 570
9. (a) 420 (b) 900 (c) 760 (d) 4800 (e) 11200 (f) 9000
(g) 6800 (h) 9600
10. (a) 38×26 (b) 49×18 (c) 26×36 **11.** 1242 **12.** 936 **13.** 1848
14. ₹ 5625 **15.** 960 **16.** 1148 **17.** 1320
18. (a) False ($1 \times 2 = 2$; $1 + 2 = 3$) (b) False (c) True (d) False

Exercise 25

1. (a) 10 (b) 2 (c) 5 (d) 5 (e) 5
2. (a) 8 (b) 4 (c) 2 (d) 2 (e) 2
3. (a) 18 (b) 3 (c) 6 (d) 6 (e) 6
4. (a) 20 (b) 5 (c) 4 (d) 4 (e) 4
5. 3 **6.** 4 **7.** 4 **8.** 3 **9.** 7 **10.** 4
11. 4 **12.** 6 **13.** 3 **14.** 3 **15.** 4 **16.** 4
17. 6 **18.** 5 **19.** 6 **20.** 4

Exercise 26

1. 18 ÷ 3 = 6, 18 ÷ 6 = 3
2. 20 ÷ 4 = 5, 20 ÷ 5 = 4
3. 28 ÷ 7 = 4, 28 ÷ 4 = 7
4. 24 ÷ 8 = 3, 24 ÷ 3 = 8
5. 36 ÷ 9 = 4, 36 ÷ 4 = 9
6. 40 ÷ 8 = 5, 40 ÷ 5 = 8
7. 32 ÷ 4 = 8, 32 ÷ 8 = 4
8. 30 ÷ 5 = 6, 30 ÷ 6 = 5
9. 35 ÷ 7 = 5, 35 ÷ 5 = 7
10. 42 ÷ 6 = 7, 42 ÷ 7 = 6
11. 56 ÷ 7 = 8, 56 ÷ 8 = 7
12. 63 ÷ 9 = 7, 63 ÷ 7 = 9
13. 50 ÷ 10 = 5, 50 ÷ 5 = 10
14. 9 ÷ 9 = 1, 9 ÷ 1 = 9
15. 8 ÷ 8 = 1, 8 ÷ 1 = 8
16. 6 × 4 = 24, 4 × 6 = 24
17. 5 × 5 = 25
18. 3 × 7 = 21, 7 × 3 = 21
19. 3 × 9 = 27, 9 × 3 = 27
20. 8 × 6 = 48, 6 × 8 = 48
21. 9 × 5 = 45, 5 × 9 = 45
22. 6 × 9 = 54, 9 × 6 = 54
23. 7 × 7 = 49
24. 9 × 1 = 9, 1 × 9 = 9

Exercise 27

1. 9
2. 16
3. 39
4. 65
5. 8
6. 25
7. 1
8. 1
9. 1
10. 1
11. 1
12. 1
13. 9
14. 7
15. 14
16. 0
17. 0
18. 0

Exercise 28

1. 7
2. 6
3. 7
4. 6
5. 6
6. 4
7. 5
8. 9
9. 9
10. 8
11. 9
12. 8
13. 9
14. 8
15. 8
16. 6
17. 3
18. 6 metres
19. 5
20. 4
21. 7
22. 4 kg
23. 9
24. 8

Exercise 29

1. 12
2. 32
3. 12
4. 31
5. 11
6. 11
7. 20
8. 10
9. 41
10. 23
11. 121
12. 102
13. 413
14. 312
15. 111
16. 302
17. 200
18. 102
19. 1234
20. 1231

Exercise 30

1. 19
2. 15
3. 15
4. 17
5. 15
6. 12
7. 19
8. 12
9. 27
10. 19
11. 14
12. 23
13. 157
14. 243
15. 126
16. 124
17. 115
18. 115
19. 108
20. 138
21. 1867
22. 1152
23. 1235
24. 1179
25. 1023
26. 89
27. 25
28. 85
29. 97
30. 79
31. 468
32. 563
33. 1293
34. 892
35. 634

Exercise 31

1. 14
2. ₹ 18
3. 16
4. 18
5. 84
6. 96
7. ₹ 96
8. 142
9. 75
10. 46
11. ₹ 367
12. 130 litres
13. ₹ 863
14. 857
15. 913

Exercise 32

1. Quotient = 268, Remainder = 1
2. Quotient = 135, Remainder = 2
3. Quotient = 39, Remainder = 3
4. Quotient = 55, Remainder = 3
5. Quotient = 158, Remainder = 2
6. Quotient= 147, Remainder = 3
7. Quotient = 88, Remainder = 4
8. Quotient = 87, Remainder = 4
9. Quotient = 81, Remainder = 1
10. Quotient = 53, Remainder = 2
11. Quotient = 64, Remainder = 5
12. Quotient = 87, Remainder = 5
13. Quotient = 68, Remainder = 3
14. Quotient = 146, Remainder = 1
15. Quotient = 351, Remainder = 3
16. Quotient = 502, Remainder = 0
17. Quotient = 594, Remainder = 4
18. Quotient = 659, Remainder = 7
19. Quotient = 576, Remainder = 3
20. Quotient = 868, Remainder = 5
21. Quotient = 34, Remainder = 7
22. Quotient = 51, Remainder = 4
23. Quotient = 103, Remainder = 7
24. Quotient = 241, Remainder = 6

Exercise 33

1. 4, 3 **2.** 8, 4 **3.** 13, 5 **4.** 8 **5.** 10, 8 **6.** 52 weeks, 1 day
7. 192 pens, ₹ 2 **8.** 141 students, 3 notebooks **9.** 234 rows, 6 saplings **10.** 680 bulbs, 4 bulbs

ASSESSMENT 6

Question bag 1

1. (b) **2.** (d) **3.** (b) **4.** (d) **5.** (c) **6.** (b)
7. (a) **8.** (a) **9.** (b) **10.** (d) **11.** (d) **12.** (c)
13. (a) **14.** (b) **15.** (d) **16.** (a) **17.** (b) **18.** (b)
19. (b) **20.** (b) **21.** (b) **22.** (b) **23.** (c) **24.** (b)
25. (d)

Question bag 2

1. (a) quotient (b) divisor (c) divided (d) 350
2. (a) True (b) True (c) False (d) False (e) False (f) False
(g) False (h) True (i) True (j) False (k) True (l) False
3. (a) 7 (b) 5 (c) 8 (d) 6 (e) 4 (f) 8
(g) 6 (h) 7 (i) 9 (j) 5
4. (a) 45 (b) 81 (c) 18 (d) 32 (e) 48 (f) 40
(g) 56 (h) 100
5. (a) 6 (b) 4 (c) 9 (d) 5 (e) 9 (f) 7
6. (a) 9 (b) 4 (c) 10 (d) 9 (e) 7 (f) 6
7. (a) 8 (b) 4 (c) 7 (d) 9 (e) 5
8. (a) < (b) < (c) > (d) = (e) > (f) =
9. (a) 1 (b) 10 (c) 1 (d) 0 (e) 18 (f) 1
(g) 9 (h) 1 (i) 0 (j) 79
10. (a) Yes (b) No (c) No
11. (a) Dividend = 76, Divisor = 8, Quotient = 9, Remainder = 4 (b) Dividend = 38, Divisor = 6, Quotient = 6, Remainder = 2
(c) Dividend = 54, Divisor = 5, Quotient = 10, Remainder = 4 (d) Dividend= 30, Divisor = 4, Quotient = 7, Remainder = 2
(e) Dividend = 83, Divisor = 9, Quotient = 9, Remainder = 2 (f) Dividend = 67, Divisor = 7, Quotient = 9, Remainder = 4
(g) Dividend = 73, Divisor = 9, Quotient = 8, Remainder = 1
12. (a) 46 ÷ 10, Q = 4, R = 6 (b) 379 ÷ 10, Q = 37, R = 9 (c) 700 ÷ 10, Q = 70, R = 0
(d) 7776 ÷ 10, Q = 777, R = 6 (e) 23 ÷ 10, Q = 2, R = 3 (f)347 ÷ 10, Q = 34, R = 7
(g) 560 ÷ 10, Q = 56, R = 0 (h) 835 ÷ 10, Q = 83, R = 5
13. (a) 4, 1 (b) 7, 1 (c) 6, 4 (d) 8, 2 **14.** 124 **15.** 434
16. (a) Q = 32 (b) Q = 95 (c) Q = 87 (d) Q = 284 (e) Q = 163 (f) Q = 166
(g) Q = 69 (h) Q = 187
17. 1000 ÷ 8 = 125 **18.** 999 ÷ 7, Q = 142, R = 5
19. (a) 168 (b) 52 (c) 134 (d) 129 (e) 936 (f) 1279
(g) 842 (h) 943
20. (a) Q = 148, R = 2 (b) Q = 74, R = 3 (c) Q = 127, R = 0 (d) Q = 83, R = 8 (e) Q = 484, R = 4
(f) Q = 721, R = 4 (g) Q = 897, R = 3

Exercise 34

1. (a) Rupees thirty and paise sixty-five (b) Rupees eight and paise seventy
(c) Rupees fifty-three and paise eighteen (d) Rupees one hundred six and paise five
(e) Rupees twenty-eight (f) Rupee one and paisa one
(g) Paise ninety-three (h) Paise four

2. (a) ₹ 46.75 (b) ₹ 100.68 (c) ₹ 5.46 (d) ₹ 74.00 (e) ₹ 300.00 (f) ₹ 17.09
(g) ₹ 4.04 (h) ₹ 1.01 (i) ₹ 1.00 (j) ₹ 0.73 (k) ₹ 0.03 (l) ₹ 0.01

3. (a) Rupees seventy and paise thirty-five
(b) Rupees eight and paise ninety-eight
(c) Rupee one and paise sixty-four
(d) Rupees sixty-two and paise eight
(e) Rupees sixteen
(f) Rupees two and paise five
(g) Paise forty-three
(h) Paise fifty
(i) Paise eight
(j) Rupees two hundred forty-eight and paise seventy
(k) Rupees three hundred six and paise seven
(l) Rupees four hundred seventy-six

4. (a) 500 p (b) 3200 p (c) 6000 p (d) 669 p (e) 5810 p (f) 7219 p
(g) 2406 p (h) 709 p (i) 101 p (j) 95 p (k) 10 p (l) 7 p

5. (a) 29 rupees 65 paise (b) 22 rupees (c) 33 rupees 4 paise (d) 30 rupees 20 paise (e) 10 rupees 1 paisa
(f) 4 rupees (g) 1 rupee 87 paise (h) 6 rupees 3 paise (i) 203 rupees 48 paise (j) 300 rupees 3 paise
(k) 1 rupee 60 paise (l) 2 rupees 7 paise

6. (a) 178 (b) 153 (c) 365 (d) 400

7. (a) 64 (b) 91 (c) 130 (d) 193

8. (a) 28 (b) 72 (c) 90 (d) 104

9. (a) 25 (b) 80 (c) 66 (d) 33

10. (a) 15 (b) 22 (c) 35 (d) 36

11. (a) 5 (b) 15 (c) 25 (d) 50

Exercise 35

1. ₹ 47.94 **2.** ₹ 59.40 **3.** ₹ 75.00 **4.** ₹ 100.15 **5.** ₹ 152.40 **6.** ₹ 93.43
7. ₹ 77.70 **8.** ₹ 293.05 **9.** ₹ 404.70 **10.** ₹ 606.14 **11.** ₹ 195.60 **12.** ₹ 399.25
13. ₹ 883.27 **14.** ₹ 229.55 **15.** ₹ 532.57 **16.** ₹ 110.75 **17.** ₹ 9.76 **18.** ₹ 47.91
19. ₹ 104.20 **24.** ₹ 183.55

Exercise 36

1. ₹ 17.55 **2.** ₹ 6.35 **3.** ₹ 31.69 **4.** ₹ 11.95 **5.** ₹ 28.85 **6.** ₹ 90.55
7. ₹ 65.35 **8.** ₹ 185.99 **9.** ₹ 36.75 **10.** ₹ 119.58 **11.** ₹ 416.66 **12.** ₹ 108.18
13. ₹ 197.98 **14.** ₹ 33.92 **15.** ₹ 39.31 **16.** ₹ 36.85 **17.** ₹ 163.15 **18.** ₹ 0.19
19. ₹ 7.79 **20.** ₹ 19.06 **21.** ₹ 1.97

Exercise 37

1. ₹ 203.25 **2.** ₹ 200.25 **3.** ₹ 35.00 **4.** ₹ 111.00 **5.** ₹ 252.50 **6.** ₹ 20.35
7. ₹ 694.35 **8.** ₹ 42.25 **9.** ₹ 64.80 **10.** ₹ 153.55 **11.** Inkpen, ₹ 14.85 **12.** ₹ 46.70
13. ₹ 67.60 **14.** ₹ 7.90 **15.** ₹ 31.23 **16.** ₹ 30.45 **17.** ₹ 13.76 **18.** ₹ 22.75

Exercise 38

1. ₹ 81.50 **2.** ₹ 176.70 **3.** ₹ 870.00 **4.** ₹ 1795.01 **5.** ₹ 693.76 **6.** ₹ 2004
7. ₹ 267.90 **8.** ₹ 628.00 **9.** ₹ 547.80 **10.** ₹ 195.60 **11.** ₹ 8.50 **12.** ₹ 1983.00

ASSESSMENT 7

Question bag 1

1. (c) **2.** (c) **3.** (b) **4.** (a) **5.** (c) **6.** (a)
7. (c) **8.** (d) **9.** (a) **10.** (b) **11.** (b) **12.** (d)

Question bag 2

1. (a) 100 (b) 360 (c) 0.08 (d) 9 (e) 90 (f) 8
(g) 4.05 (h) 2100 (i) 76 (j) 77.75 (k) 8.07 (l) 9.10
(m) 100 (n) 16, 8

2. ₹ 10.45 **3.** ₹ 13.05 **4.** ₹ 316.05 **5.** ₹ 114.75 **6.** ₹ 518.08 **7.** ₹11.60

8. ₹ 269.15 **9.** Gel pen; ₹ 6.65

Exercise 39

1. (b), (d), (h), (i), (j)

9. (a) $\frac{3}{8}$ (b) $\frac{4}{5}$ (c) $\frac{5}{12}$ (d) $\frac{4}{9}$ (e) $\frac{2}{6}$ (f) $\frac{4}{8}$

10. (a) $\frac{5}{8}$ (b) $\frac{5}{6}$ (c) $\frac{5}{8}$ (d) $\frac{2}{3}$ (e) $\frac{3}{4}$ (f) $\frac{4}{6}$ (g) $\frac{3}{4}$

11. (a) $\frac{3}{7}$ (b) $\frac{1}{5}$ (c) $\frac{3}{6}$ (d) $\frac{5}{6}$ (e) $\frac{1}{8}$ (f) $\frac{7}{10}$
(g) $\frac{6}{9}$ (h) $\frac{9}{11}$ (i) $\frac{8}{12}$ (j) $\frac{12}{17}$

12. (a) four-eighths (b) five-sevenths (c) one-fifth (d) four-sixths (e) seven-ninths (f) six-elevenths
(g) eight-tenths (h) nine-twelfths (i) two-thirds (j) seven-sixteenths

Exercise 40

1. (a) Numerator = 1, Denominator = 7 (b) Numerator = 3, Denominator = 11 (c) Numerator = 2, Denominator = 9
(d) Numerator = 7, Denominator = 10 (e) Numerator = 11, Denominator = 24 (f) Numerator = 8, Denominator = 13
(g) Numerator = 17, Denominator = 35 (h) Numerator = 10, Denominator = 30 (i) Numerator = 7, Denominator = 23
(j) Numerator = 22, Denominator = 41

2. (a) $\frac{7}{12}$ (b) $\frac{5}{8}$ (c) $\frac{4}{5}$ (d) $\frac{2}{7}$ (e) $\frac{3}{6}$ (f) $\frac{9}{10}$
(g) $\frac{7}{15}$ (h) $\frac{14}{25}$

3. (a) denominator (b) numerator (c) 14 (d) 23 (e) numerator, denominator

Exercise 41

2. (a) $\frac{1}{2}$ of 8 = 4 (b) $\frac{1}{2}$ of 10 = 5 (c) $\frac{1}{2}$ of 14 = 7 (d) $\frac{1}{2}$ of 20 = 10

3. (a) $\frac{1}{3}$ of 12 = 4 (b) $\frac{1}{3}$ of 15 = 5 (c) $\frac{1}{3}$ of 21 = 7 **4.** (a) $\frac{1}{4}$ of 16 = 4 (b) $\frac{1}{4}$ of 28 = 7

5. (a) 11 (b) 6 (c) 9 (d) 9 (e) 14 (f) 14 (g) 4 (h) 9

ASSESSMENT 8

Question bag 1

1. (d) **2.** (c) **3.** (a) **4.** (c) **5.** (c) **6.** (b)
7. (a) **8.** (a) **9.** (d) **10.** (c) **11.** (c) **12.** (d)
13. (b) **14.** (b)

Question bag 2

2. (a) 10 (b) 7 (c) 5 (d) numerator, denominator (e) four
(f) denominator, numerator

3. (a) Shaded → $\frac{1}{3}$, Unshaded → $\frac{2}{3}$ (b) Shaded → $\frac{1}{4}$, Unshaded → $\frac{3}{4}$ (c) Shaded → $\frac{5}{8}$, Unshaded → $\frac{3}{8}$
(d) Shaded → $\frac{7}{11}$, Unshaded → $\frac{4}{11}$ (e) Shaded → $\frac{3}{10}$, Unshaded → $\frac{7}{10}$ (f) Shaded → $\frac{4}{7}$, Unshaded → $\frac{3}{7}$

(g) Shaded → $\frac{5}{14}$, Unshaded → $\frac{9}{14}$ (h) Shaded → $\frac{2}{9}$, Unshaded → $\frac{7}{9}$ (i) Shaded → $\frac{7}{16}$, Unshaded → $\frac{9}{16}$

(j) Shaded → $\frac{8}{15}$, Unshaded → $\frac{7}{15}$

4. (a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{1}{4}$ (d) $\frac{1}{5}$

Exercise 42

1. cm **2.** m **3.** cm **4.** km **5.** cm **6.** m
7. m **8.** km

Exercise 43

1. (a) 300 cm (b) 600 cm (c) 1000 cm (d) 1300 cm (e) 1600 cm (f) 3100 cm
(g) 6400 cm (h) 8900 cm
2. (a) 283 cm (b) 470 cm (c) 187 cm (d) 805 cm (e) 1010 cm (f) 1506 cm
(g) 6342 cm (h) 7404 cm (i) 9088 cm
3. (a) 4 m (b) 16 m (c) 3 m 45 cm (d) 6 m 5 cm (e) 5 m 19 cm (f) 13 m 7cm
(g) 54 m 10 cm (h) 65 m 1 cm
4. (a) 7000 m (b) 9000 m (c) 3330 m (d) 5055 m (e) 2005 m
5. (a) 4 km (b) 1 km 756 m (c) 2 km 300 m (d) 6 km 6 m (e) 7 km 70 m

Exercise 44

1. 82 m 14 cm **2.** 104 m 95 cm **3.** 70 m 96 cm **4.** 123 m **5.** 133 m 20 cm **6.** 54 m 42 cm
7. 311 m 30 cm **8.** 204 m **9.** 855 m 28 cm **10.** 161 m 10 cm **11.** 115 m 5 cm **12.** 137 m 85 cm
13. 55 m 45 cm **14.** 182 m 65 cm **15.** 13 km 153 m **16.** 46 km 756 m **17.** 121 km 924 m **18.** 18 km 431 m
19. 46 km 82 m **20.** 122 km 233 m **21.** 62 km 824 m **22.** 190 km 342 m **23.** 66 km 466 m **24.** 59 km 164 m

Exercise 45

1. 9 m 18 cm **2.** 17 m 15 cm **3.** 12 m 76 cm **4.** 28 m 55 cm **5.** 15 m 62 cm **6.** 37 m 19 cm
7. 30 m 68 cm **8.** 34 m 87 cm **9.** 33 m 62 cm **10.** 4 m 45 cm **11.** 11 m 28 cm **12.** 7 m 97 cm
13. 13 m 39 cm **14.** 21 m 14 cm **15.** 18 km 365 m **16.** 63 km 337 m **17.** 46 km 675 m **18.** 76 km 674 m
19. 28 km 159 m **20.** 37 km 478 m **21.** 53 km 850 m **22.** 35 km 886 m

Exercise 46

1. 10 m 15 cm **2.** 4 m 60 cm **3.** 533 m 14 cm **4.** 34 m 95 cm **5.** 10 m 33 cm **6.** 9 m 27 cm
7. 3 m 87 cm **8.** Gaurav, 9 cm **9.** 2 m 32 cm **10.** 6 m 55 cm **11.** 45 m 5 cm, 19 m 95 cm
12. 128 km 785 m **13.** 34 km 10 m **14.** 5 km 975 m

ASSESSMENT 9

Question bag 1

1. (a) **2.** (d) **3.** (b) **4.** (b) **5.** (b) **6.** (d)
7. (c) **8.** (b) **9.** (d) **10.** (c) **11.** (d) **12.** (b)

Question bag 2

1. (a) m (b) km (c) cm (d) m (e) m (f) m
2. (a) < (b) > (c) = (d) < (e) < (f) <

Exercise 47

1. (a) kg (b) g (c) kg (d) g (e) kg (f) g
(g) g (h) g
2. (a) 1 kg potato chips (b) 1 kg popcorn (c) 1 kg groundnuts (d) 1 kg peas

Exercise 48

1. (a) 5000 g (b) 6684 g (c) 2400 g (d) 3090 g (e) 8028 g (f) 1001 g
2. (a) 4 kg (b) 5 kg 764 g (c) 1 kg 85 g (d) 5 kg 6 g (e) 3 kg 50 g (f) 9 kg 875 g

Exercise 49

1. 215 kg **2.** 822 kg **3.** 923 g **4.** 13 kg 888 g **5.** 26 kg 982 g **6.** 25 kg 940 g
7. 92 kg 333 g **8.** 151 kg **9.** 121 kg 625 g **10.** 138 kg 35 g **11.** 66 kg 45 g **12.** 871 kg 950 g
13. 207 kg 889 g **14.** 158 kg 539 g **15.** 490 kg 890 kg **16.** 495 g 519 g **17.** 192 kg 802 g **18.** 62 kg 351g
19. 131 kg 30 g **20.** 1674 kg 130 g

Exercise 50

1. 148 kg **2.** 156 g **3.** 365 g **4.** 33 kg 315 g **5.** 35 kg 58 g **6.** 14 kg 629 g
7. 98 kg 577 g **8.** 105 kg 825 g **9.** 53 kg 595 g **10.** 127 kg 886 g **11.** 24 kg 225 g **12.** 350 kg 896 g
13. 0 kg 724 g **14.** 9 kg 625 g **15.** 1 kg 947 g **16.** 8 kg 585 g **17.** 48 kg 973 g **18.** 11 kg 887 g
19. 1 kg 977 g **20.** 1 kg 615 g **21.** 194 kg 285 g **22.** 43 kg 875 g

Exercise 51

1. 4 kg 325 g **2.** 30 kg 100 g **3.** 36 kg 950 g **4.** 7 kg 945 g **5.** 44 kg 240 g **6.** 18 kg 650 g
7. Sonu, 8 kg 435 g **8.** 8 kg 825 g **9.** 26 kg 875 g **10.** 38 kg 575 g **11.** 2 kg 725 g **12.** 575 g
13. 875 g **14.** 34 kg 900 g

ASSESSMENT 10

Question bag 1

1. (b) **2.** (c) **3.** (b) **4.** (b) **5.** (c) **6.** (b)
7. (c) **8.** (c) **9.** (a) **10.** (a) **11.** (a) **12.** (c)

Question bag 2

1. (a) g (b) kg (c) g (d) kg (e) g (f) kg
(g) kg
2. (a) 1000 (b) 500 (c) 250
3. (a) 1000 kg (b) 100 g (c) 2 kg (d) 10 g (e) 3 kg
4. (a) 500 (b) 200 (c) 400 (d) 700 (e) 650
5. (a) < (b) = (c) > (d) > (e) <
6. 46 kg 310 g **7.** 34 kg 115 g **8.** 75 kg 658 g

Exercise 52

1. (a) L (b) mL (c) L (d) mL (e) mL (f) L (g) mL
2. (a) 3000 mL (b) 6000 mL (c) 7800 mL (d) 2764 mL (e) 1080 mL (f) 5005 mL
3. (a) 5 L (b) 8 L 100 mL (c) 9 L 372 mL (d) 2 L 48 mL (e) 6 L 2 mL (f) 3 L 20 mL

Exercise 53

1. 594 L **2.** 762 L **3.** 752 L **4.** 11 L 900 mL **5.** 20 L 985 mL **6.** 42 L
7. 41 L 404 mL **8.** 86 L 425 mL **9.** 122 L 260 mL **10.** 39 L 787 mL **11.** 78 L 859 mL **12.** 196 L 100 mL
13. 222 L 805 mL **14.** 284 L 317 mL **15.** 192 L 180 mL **16.** 100 L **17.** 65 L 297 mL **18.** 152 L 882 mL
19. 149 L 542 mL

Exercise 54

1. 85 mL **2.** 208 L **3.** 278 L **4.** 26 L 185 mL **5.** 6 L 227 mL **6.** 11 L 475 mL
7. 45 L 775 mL **8.** 243 L 864 mL **9.** 62 L 889 mL **10.** 9 L 75 mL **11.** 41 L 939 mL **12.** 294 L 288 mL
13. 2 L 216 mL **14.** 26 L 575 mL **15.** 92 L 935 mL **16.** 18 L 645 mL **17.** 4 L 480 mL **18.** 66 L 985 mL
19. 575 mL

Exercise 55

1. 12 L **2.** 6 L 25 mL **3.** 18 L 35 mL **4.** 14 L 445 mL **5.** 3 L 675 mL **6.** 535 mL
7. 16 L 650 mL **8.** 775 mL **9.** 13 L **10.** 253 L 800 mL **11.** 1 L 326 mL

ASSESSMENT 11

Question bag 1

1. (a) **2.** (b) **3.** (b) **4.** (b) **5.** (c) **6.** (c)
7. (a) **8.** (c) **9.** (c) **10.** (c) **11.** (b) **12.** (a)

Question bag 2

1. (a) 750 (b) 300 (c) 400 (d) 450 (e) 500
2. (a) < (b) = (c) > (d) > (e) <
3. 191 L 500 mL **4.** 52 L 785 mL **5.** 1 L 180 mL **6.** 12 L 560 mL **7.** 864 L 335 mL

Exercise 56

1. 8:00, 8 o'clock **2.** 5:00, 5 o'clock **3.** 1:00, 1 o'clock **4.** 11:00, 11 o'clock **5.** 9:00, 9 o'clock
6. 12:00, 12 o'clock **7.** Hour-hand at 4 **8.** Hour-hand at 6 **9.** Hour-hand at 10
10. (a) 12, 5 (b) 12, 9 (c) 12, 3 (d) 12, 1 (e) 12, 12

Exercise 57

1. 4:05, 5 minutes past 4 **2.** 10:40, 40 minutes past 10 **3.** 6:10, 10 minutes past 6
4. 3:35, 35 minutes past 3 **5.** 9:25, 25 minutes past 9 **6.** 1:55, 55 minutes past 1
7. 11:15, 15 minutes past 11 **8.** 5:20, 20 minutes past 5 **9.** 7:45, 45 minutes past 7

Exercise 58

1. 1:30, Half past 1 **2.** 11:30, Half past 11 **3.** 4:30, Half past 4
4. 7:30, Half past 7 **5.** 2:30, Half past 2 **6.** 9:30, Half past 9

Exercise 59

1. 5:15, Quarter past 5 **2.** 1:15, Quarter past 1 **3.** 7:15, Quarter past 7
4. 3:15, Quarter past 3 **5.** 12:15, Quarter past 12 **6.** 9:15, Quarter past 9

Exercise 60

1. 3:45, Quarter to 4 **2.** 8:45, Quarter to 9 **3.** 10:45, Quarter to 11
4. 12:45, Quarter to 1 **5.** 7:45, Quarter to 8 **6.** 4:45, Quarter to 5

ASSESSMENT 12

Question bag 1

1. (d) **2.** (c) **3.** (c) **4.** (c) **5.** (b) **6.** (c)
7. (c) **8.** (b) **9.** (c) **10.** (a) **11.** (b)

Question bag 2

2. (a) 15 (b) 3 (c) 12 o'clock (d) longer, shorter (e) 3 (f) Quarter, 2
(g) 6:15 (h) 9 (i) 45 (j) 4 : 45 (k) twice

3. (a) True (b) False (c) False (d) False (e) False

Exercise 61

1. (a) February (b) 17 years (c) 43 years (d) 25th February, 2016; 25. 2.2016 (e) 7 months

2. (a) 5 (b) 5; January, April, July, October, December
(e) Sunday (f) Monday, Tuesday, Wednesday, Wednesday

4. (a) Thursday (b) Saturday (c) Tuesday (d) Monday (e) Monday (f) Monday

ASSESSMENT 13

Question bag 1

1. (b) **2.** (d) **3.** (b) **4.** (a) **5.** (c) **6.** (d)
7. (b) **8.** (a) **9.** (c) **10.** (c) **11.** (d) **12.** (c)

Question bag 2

1. (a) 365 (b) 12 (c) 366 (d) 14 (e) 10 (f) 100
(g) 7

2. 1992, 2000, 2008

Exercise 62

1. P and Q **2.** A, B, C, D

3. (a) XY, YZ, ZX (b) AB, BC, CD, DA (c) PQ, QR, RS, SP

4. (a) EF, FG, GH, HI, IJ, JE (b) LM, MN, NO, OP, PL

5. Yes, infinite number of such line segments can be drawn. **6.** One only

7. (a) E (b) P (c) E (d) D (e) A, B, C, D, E, P, Q
(f) $\overline{AB}$, $\overline{BC}$, $\overline{CD}$, $\overline{DA}$, $\overline{PQ}$, $\overline{BD}$ and $\overline{AC}$

8. $\overrightarrow{OA}$, $\overrightarrow{OB}$, $\overrightarrow{OC}$, $\overrightarrow{OP}$, $\overrightarrow{OQ}$, $\overrightarrow{OR}$, $\overrightarrow{OS}$, and $\overrightarrow{OT}$

9. (a) two (b) no (c) one (d) definite (e) $\overleftrightarrow{AB}$ (f) $\overrightarrow{AB}$
(g) point (h) position

10. (a) $\overleftrightarrow{SR}$, $\overleftrightarrow{PQ}$ (b) $\overleftrightarrow{SP}$, $\overleftrightarrow{RQ}$ (c) $\overrightarrow{SQ}$, $\overrightarrow{PR}$

Exercise 64

1. (a) Triangle (b) Rectangle (c) Circle (d) Square (e) Quadrilateral

2. (a) Circular (b) Rectangular (c) Rectangular (d) Circular (e) Triangular (f) Rectangular
(g) Rectangular (h) Square

3. (a) 3 , 3 (b) 4 , 4 (c) Equal (d) Opposite (e) no, no

4. (a) 6 (b) 5 (c) 8 (d) 8 (e) 6 (f) 13
(g) 8

5. (a) 3 (b) 6 (c) 9

Exercise 65

1. (a) curved (b) plane (c) curved (d) plane

2. (a) Cone (b) Sphere (c) Cylinder (d) Cylinder (e) Cylinder (f) Cube
(g) Cylinder (h) Cylinder (i) Sphere (j) Cuboid

3. (a) 6, 12, 8 (b) opposite (c) cube (d) sphere (e) cone (f) 2, 2
(g) cylinder

ASSESSMENT 14

Question bag 1

1. (a)	**2.** (a)	**3.** (b)	**4.** (c)	**5.** (d)	**6.** (d)
7. (c)	**8.** (c)	**9.** (b)	**10.** (a)	**11.** (a)	**12.** (d)

Question bag 2

1. (A) - (b), (B) - (e), (C) - (d), (D) - (g), (E) - (a), (F) - (h), (G) - (f), (H) - (c)

2. (a) Cone	(b) Cylinder	(c) Cone	(d) Cylinder	(e) Sphere	(f) Cylinder
3. (a) No	(b) 0	(c) No	(d) Yes	(e) No	(f) 8
4. (a) point	(b) square	(c) sphere	(d) three	(e) edge	(f) point, vertex
(g) 3					
5. (a) True	(b) False	(c) False	(d) True	(e) True	

Exercise 66

1. (a) Yes	(b) No	(c) Yes	(d) No	(e) No	(f) No
(g) Yes	(h) Yes	(i) No			
2. (a) Yes	(b) No	(c) No	(d) Yes	(e) Yes	(f) Yes
(g) Yes	(h) Yes	(i) Yes			
4. (a) WHAT	(b) MIX	(c) TOM	(d) HIDE	(e) HOOKED	(f) BOX

Exercise 68

1. (a) Little Red Riding Hood		(b) 6	(c) Hansel & Gretel		
2. (a) Guitar	(b) Violin and Drum	(c) Sitar			
3. (a) 30	(b) 4	(c) Magazine			
4. (a) 6	(b) Pineapple	(c) 40	(d) 25	(e) 10	(f) 135