PREFACE

Precise Mathematics is a series of text books specially prepared to meet the requirements of Primary School pupils as per the latest Mathematics curriculum prescribed by the Council for the ISC Examinations, New Delhi.

This series has adopted a learner-centred and lively approach to the teaching of Mathematics. All basic concepts have been clearly explained with the help of examples to lay a strong foundation for the subject. Numerous illustrations are given in each chapter to enhance the pupils' understanding of the Mathematical concepts. Stimulating questions and fun activities of the lessons challenge the pupils to think critically and creatively. The series endeavours to nurture the mathematical thinking and systematic reasoning of pupils and to arouse a child's interest and curiosity in the subject.

'Precise Mathematics' is a departure from conventional text books in as much as it attempts to develop in the student a fondness for the subject through a refreshing style of presentation of the fundamental concepts and their applications.

This is a text-cum-workbook. It will help the child to master Mathematical skills through continuous practice. It encourages the students to learn rather than to be taught; to think; to reason and to use simple mathematical language and symbols; and to understand, with the aid of extensive illustrations, the relationship that exists between the subject and everyday life.

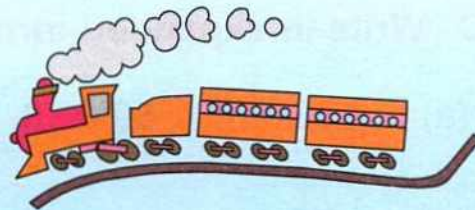Feedback from teachers for the further improvement of this series will be highly appreciated.

Editor

CONTENTS

1 Revision

Exercise

A. Write in figures.

(a) Thirty eight   38   (b) Nineteen

(c) Ninety nine   (d) Sixty one

(e) Seventy seven   (f) Three

(g) Zero   (h) Twenty

B. Write in Words.

(a) 89

(b) 46

(c) 99

(d) 27

(e) 52

(f) 16

C. Write in expanded form.

(a) 68 | 60 + 8

(c) 77 |

(e) 25 |

(g) 63 |

(i) 88 |

D. Write in compact form.

(b) 70 + 5 = | 75

(d) 90 + 3 = |

(f) 10 + 8 = |

(h) 60 + 4 = |

(j) 50 + 2 = |

E. Fill in the blanks.

(a) The number before 31 is _____.

(b) The number after 58 is _____.

(c) The number before _____ is 47.

(d) The number after _____ is 12.

(e) 27 is in between _____ and 28.

(f) 76 is in between 75 and _____.

F. Circle ◯ the largest number and cross (×) the smallest number in each row.

| (a) | 20 | 30 | 58 | 43 | 32 | 25 |
(b)	25	36	89	35	15	89
(c)	96	69	78	99	36	85
(d)	30	78	65	73	86	46
(e)	77	74	23	63	69	23
(f)	99	27	64	93	54	10

G. Arrange in ascending order.

(a) 49   51   23   45   11   ....

(b) 96   76   85   63   50   ....

(c) 49   17   30   29   90   ....

(d) 81   84   79   68   50   ....

H. Arrange in descending order.

(a) 7   18   29   99   30   ....

(b) 40   15   77   81   68   ....

(c) 89   68   93   70   94   ....

(d) 13   27   49   67   52   ....

I. Miscellaneous questions

1. 71 is greater than _____ but less than _____ .

2. 84 is less than _____ but greater than _____ .

3. Write in words.
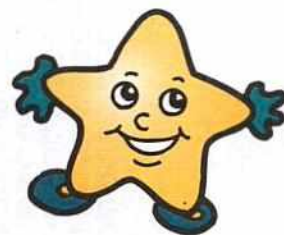
    (a) 99 : _____

    (b) 43 : _____

4. Put the sign ">" or "<" or "=".

    (a) 19 _____ 12   (b) 89 _____ Ninety eight

    (c) 40 _____ 40   (d) 37 _____ Seventeen

    (e) 67 _____ 76   (f) 99 _____ Ninety nine

5. Fill in the blanks :

    (a) _____ comes between 89 and 91.   (b) _____ comes before 45.

    (c) 69 comes before _____ .   (d) _____ comes after 57.

    (e) 39 comes after _____ .

    (f) 26 comes between _____ and _____ .

2 Numbers

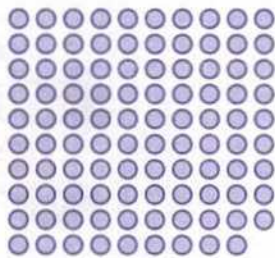## Three-digit numbers

In class 1, we have already learnt numbers from 1-99. They include only one digit and two digit numbers.

Counting Numbers

The number which is one more than 99 is hundred.

| 99 | + | 1 | = | 100 |

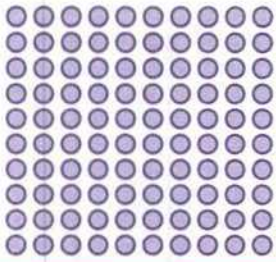**Ninety Nine**   **Hundred**
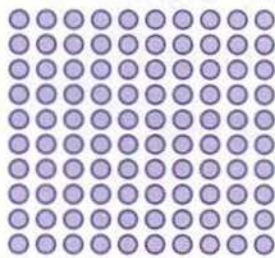
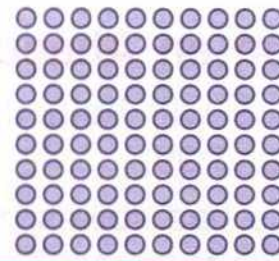**One Hundred One**

100 + 1 = 101
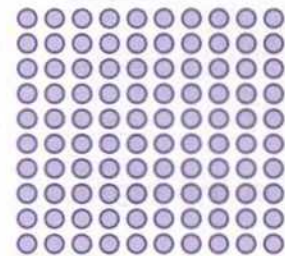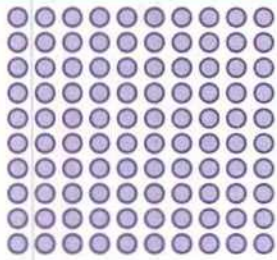
One Hundred Two

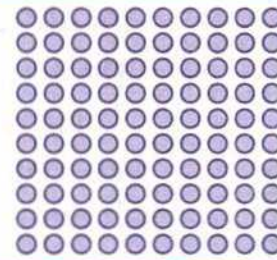100 + 2 = 102

One Hundred Three
$$100 + 3 = 103$$

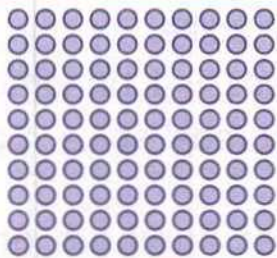### One Hundred Four
$$100 + 4 = 104$$
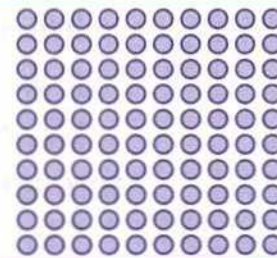
One Hundred Five
$$100 + 5 = 105$$

One Hundred Six
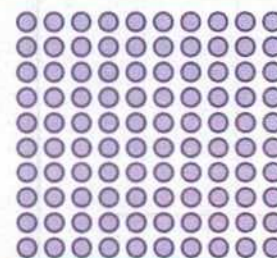$$100 + 6 = 106$$

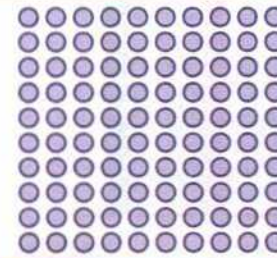### One Hundred Seven
$$100 + 7 = 107$$

One Hundred Eight
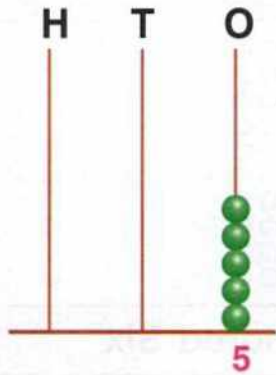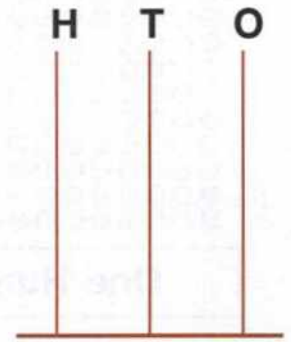$$100 + 8 = 108$$

One Hundred Nine
$$100 + 9 = 109$$

One Hundred Ten
$$100 + 10 = 110$$

Numbers on an Abacus

An abacus will help us to learn about counting numbers beyond 99.

An abacus has spikes named as O, T, H from right to left. O stands for ones, T stands for tens and H stands for hundreds. We place beads on the spikes to represent numbers and no spike has more than 9 beads.

For example, we represent 5 on an abacus with 5 beads on ones' spike.

Now consider the number 99. We represent it on an abacus as shown.
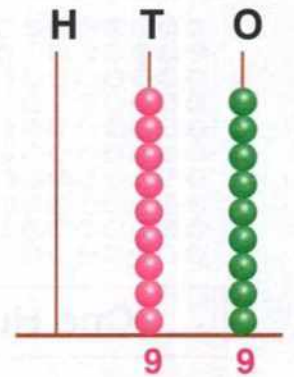
Now if we add one more to 99, there will be 10 ones in the ones' spike.
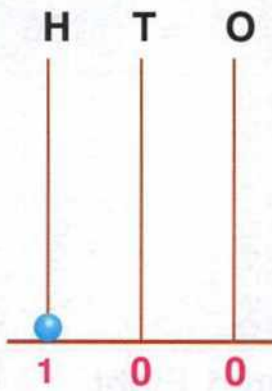
10 ones = 1 ten

We carry over this one to the tens' spike.

It will now have ten tens. But 10 tens = 1 hundred.

Hence we put one bead on the hundreds' spike. So we represent 100 as shown.

Similarly, we can represent other numbers on an abacus using beads in a similar manner.

99	+	**1**	=	**100**
Ninety Nine		**One**		**Hundred**
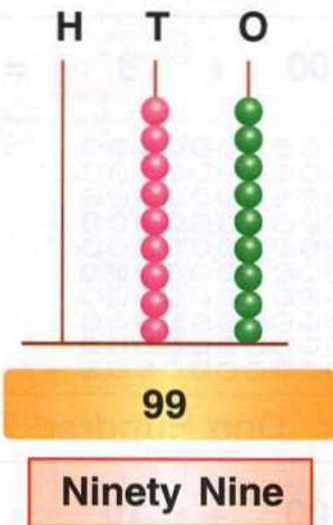
Some more examples

H T O
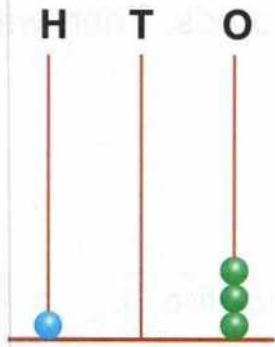
100 + 0 + 3 = **103**

One Hundred Three

H T O

100 + 10 + 0 = **110**

One Hundred Ten

H T O
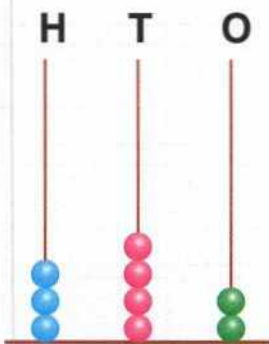
300 + 40 + 2 = **342**

Three Hundred Forty Two

H T O

400 + 50 + 3 = **453**

Four Hundred Fifty Three

H T O
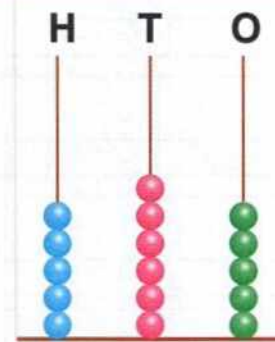
500 + 60 + 5 = **565**

Five Hundred Sixty Five

H T O

600 + 80 + 4 = **684**

Six Hundred Eighty Four

Let Us Learn How to Read 3-digit Numbers

To read, first we will count and read the number of hundreds. Then we will read the number formed by the last 2 digits together.

Example   Read 875.

H	T	O
8	7	5

Eight hundred ————— seventy five
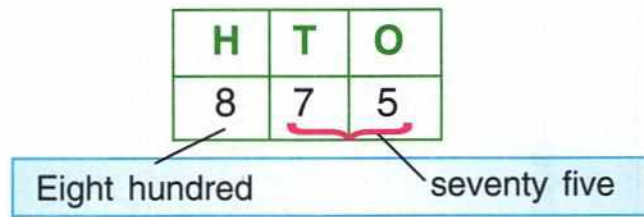
Exercise

A. Write the names of the following numbers.

1. 133

2. 341

3. 273

4. 849

5. 962

6. 774

7. 431

8. 608

9. 415

10. 558

B. Write the following in figures.

		H	T	O
1.	Two hundred thirty eight			
2.	One hundred forty seven			
3.	Six hundred sixty six			
4.	Three hundred seventy four			
5.	Five hundred ninety nine			
6.	Nine hundred thirteen			
7.	Seven hundred five			
8.	Nine hundred fifty			

C. Complete the following by filling in the missing numbers.

101			104				108		110
		113		115			118		120
121			124		126				
131		133		135			138		140
			144		146			149	
		153				157			160
161			64		166			169	
171	172			175			178		180
		183			186		188		
191	192			195				199	200

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D. Write the missing numbers as directed :

(a) Count in reverse.

110			107				103		

(b) Count forward.

211			214					219	

(c) Count forward.

321				325					330

(d) Count in reverse.

440				436			433		

(e) Count in twos.

541		545			551				559

(f) Count in reverse.

660					655			652	

(g) Count in tens.

770			800					850	

(f) Count in fives.

875			890				910		

(g) Count backward in tens.

990				950					900

999 is the greatest 3-digit number.
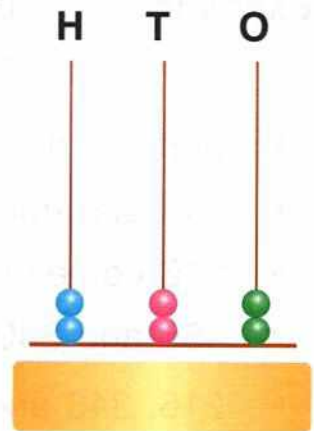
14

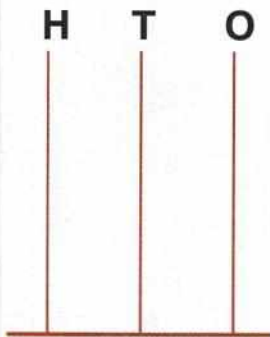**E. Write the numbers shown on the abacus.**

(a)
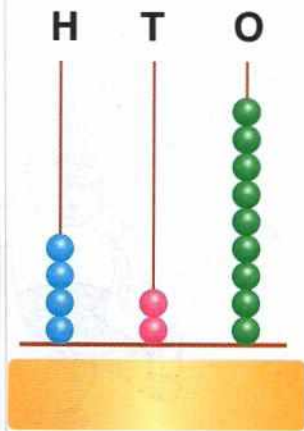
(b)

(c)
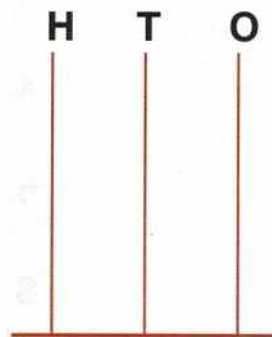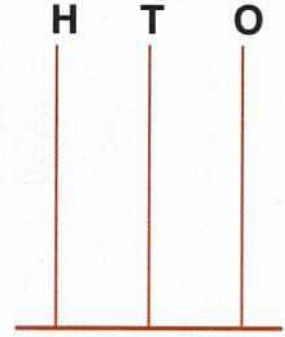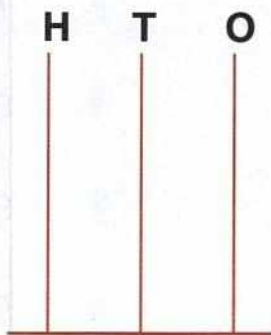

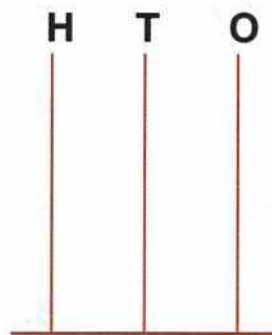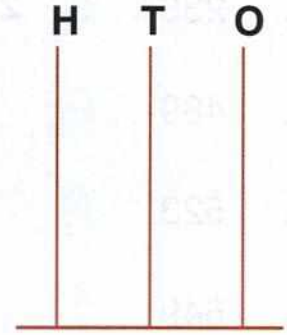**F. Represent the given numbers on an abacus.**

(a) 641

(b) 379

(c) 984

(d) 806

(e) 750

(f) 422

Before, After and Between

Look at the following numbers.

109, 216, 348, 455, 890

- 348 comes before **455**.
- 348 and 455 comes before **890**.
- 216 comes after **109**.
- 455 and 890 come after **109**.
- 216, 348 and 455 come between **109** and **890**.

Exercise

A. Write the number that comes before or after the given numbers.

1.	134	**135**	2.	399	
3.		430	4.	678	
5.		886	6.	279	
7.		796	8.	956	

B. Write the number which comes between the two given numbers.

1.	238	**239**	240	2.	761		763
3.	489		491	4.	835		837
5.	523		525	6.	911		913
7.	649		651	8.	586		588

C. Fill in the blanks.

1. **199** comes after 198.

2. _____ comes before 279.

3. _____ comes before 765.

4. _____ comes after 894.

5. _____ comes between 300 and 302.

6. _____ comes between 444 and 446.

7. _____ comes after 599.

8. _____ comes before 900.

9. 397 comes between _____ and _____ .

10. 998 comes between _____ and 999.

Comparison of Numbers

Greater than (>)   **Less than** (<)   **Equal to** (=)

- If the number on the left is greater than the number on the right, we put '>' sign.
- If the number on the left is smaller than the number on the right, we put '<' sign.
- If both the numbers are same, we then put '=' sign.

I. Comparing numbers with different number of digits.

The number with greater number of digits is always greater.

Example Compare 839 and 97.

Here, 839 has 3 digits.

97 has 2 digits.

So, 839 > 97.

II. Comparing numbers with the same number of digits.

(a) The number with more hundreds is greater.

Example Compare 546 and 731.

Compare 5 and 7 ; 5 < 7.

So, 546 < 731.

H	T	O
5	4	6
7	3	1

(b) If the hundreds are equal, then the number with more tens is greater.

Example Compare 234 and 216.

Start with the digits at the hundreds' place.

Since both the numbers have 2 at the hundreds' place, compare the digits at the tens' place.

Compare 3 and 1 ; 3 > 1.

So, 234 > 216.

H	T	O
2	3	4
2	1	6

H	T	O
2	3	4
2	1	6

(c) If both the hundreds and tens are equal, then the number with more ones is greater.

Example Compare 475 and 479.

Start with the digits at the hundreds' place.

H	T	O
4	7	5
4	7	9

In both the numbers, 4 is at the hundreds' place. Since the digits at the hundreds' place are the same, compare the digits at the tens' place.

In both the numbers, 7 is at the tens' place. Since the digits at the tens' place are also the same, compare the digits at the ones' place.

Compare 5 and 9; 5 < 9.

So, **475 < 479**.

H	T	O
4	7	5
4	7	9

H	T	O
4	7	5
4	7	9

Exercise

Put the correct sign > (greater than), < (less than) and = (equal to).

(a) 236 ◯ 49

(b) 809 ◯ 709

(c) 459 ◯ 464

(d) 674 ◯ 690

(e) 100 ◯ 121

(f) 555 ◯ 558

(g) 580 ◯ 579

(h) 98 ◯ 980

(i) 900 ◯ 900

(j) 763 ◯ 760

Ascending order

Arrangement of numbers from smaller to greater is called the **ascending order** of numbers.

Example   Consider numbers 88, 100, 187, 150 and 139. Arranging them from smaller to greater, we get : **88, 100, 139, 150, 187**.

Similarly, arranging 250, 327, 215, 829 and 209 in ascending order, we get : **209, 215, 250, 327, 829**.

- The first number in an ascending order is the **smallest number**
  88 and 209 respectively are the smallest numbers in the two series.
- The last number in an ascending order is the **greatest number**.
  187 and 829 respectively are the greatest numbers in the two series.

Descending Order

Arrangement of numbers from greater to smaller is called the **descending order** of numbers.

Example — Consider numbers 683, 751, 680, 750, 707. Arranging them from greater to smaller, we get : **751, 750, 707, 683, 680**.

Similarly arranging 808, 880, 990, 868, 999 in descending order, we get : **999, 990, 880, 868, 808**.

- The first number in a descending order is the **greatest number**
  751 and 999 respectively are the greatest numbers in the two series.
- The last number in a descending order is the **smallest number**
  680 and 808 respectively are the smallest numbers in the two series.

Exercise

A. Write in ascending order.

1. 125, 236, 447, 698   ...., ..., ..., ...
2. 237, 872, 143, 662   ...., ..., ..., ...
3. 334, 122, 568, 22   ...., ..., ..., ...
4. 630, 530, 730, 930   ...., ..., ..., ...

B. Write in descending order.

1. 123, 448, 63, 817   ...., ..., ..., ...
2. 562, 437, 763, 444   ...., ..., ..., ...
3. 413, 431, 134, 143   ...., ..., ..., ...
4. 950, 924, 550, 657   ...., ..., ..., ...

C. Circle the greatest number.

(a) 547   643   447   400   (b) 453   462   475   443
(c) 639   634   637   600   (d) 951   552   955   900

D. Circle the smallest number.

(a) 248   163   377   401   (b) 657   648   632   640
(c) 552   551   556   550   (d) 451   459   450   460

Place Value

Place value of a digit in a number depends upon its place or position.

Example 1   Write the place value of all the digits in the number 374.

$$\begin{array}{ccc} H & T & O \\ 3 & 7 & 4 \end{array}$$

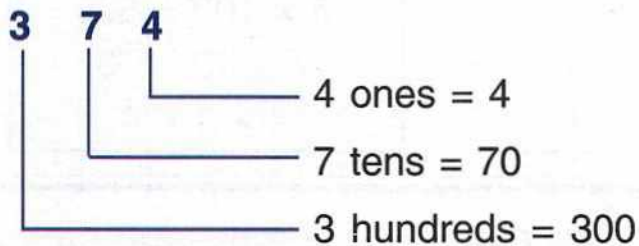There are 3 hundreds in the above number.
So, the place value of the digit 3 is, $3 \times 100 =$ **300**.
There are 7 tens in the above number.
So the place value of the digit 7 is, $7 \times 10 =$ **70**.
There are 4 ones in the above number.
So, the place value of the digit 4 is, $4 \times 1 =$ **4**.

3 7 4

4 ones = 4
7 tens = 70
3 hundreds = 300

Remember :
The place value of zero is always zero.

Example 2   Write the place value of the circled digit in each case.

(i) ⑤ 8   7

(ii) 5   ⓪ 8

5 hundreds = 500

0 tens = 0

Exercise

A. Write the place value of the circled digit in each of the following.

1. 1 ⑦ 8   7 tens   = $7 \times 10 = 70$

2. 2 4 ⑦   _____   =   _____

3. ⑧ 2 1   _____   =   _____

4. 7 ⓪ 4   _____   =   _____

5. ② 1 8   _____   =   _____

Face Value

The face value of a digit in a number is equal to the digit itself. The face value does not depend upon the place or position of a digit in the number.

Example 1   Consider the numbers **698** and **263**.

The face value of 6 hundreds in 698 is 6.
The face value of 6 tens in 263 is also 6.
Similarly, the face value of 9 tens in 6**9**8 is 9, 3 ones in 26**3** is 3 and so on.

Example 2   Write the face value and place value of all the digits in the number 574.

Digit	Face value	Place value
5	5	5 × 100 = 500
7	7	7 × 10 = 70
4	4	4 × 1 = 4

Exercise

A. Write the face values of the circled digits in the following cases.

1. 2 ⑤ 7 ___5___
2. 9 ① 5 _____
3. 7 5 ⓪ _____
4. 6 2 ③ _____
5. ⑧ 4 3 _____
6. ① 1 2 _____
7. ⑥ 1 1 _____
8. 1 ⓪ 9 _____
9. 9 ⑦ 1 _____
10. 3 ② 3 _____

B. Complete the following with respect to the circled digits.

	Number	Face value	Place value
1.	1 ⑨ 7	9	_____
2.	9 0 ③	_____	3
3.	5 ⓪ 0	_____	_____
4.	⑥ 1 8	6	_____
5.	4 ⑦ 9	_____	_____

> The place of a digit in a number does not change the face value of the digit.

C. Fill in the blanks.

1. In 735, the place value of 7 is _____
   the face value of 7 is _____

2. In 582, the place value of 8 is _____
   the face value of 8 is _____

3. In 678, the place value of 7 is _____
   the face value of 7 is _____

4. In 456, the place value of 5 is _____
   the face value of 5 is _____

5. In 749, the place value of 9 is _____
   the face value of 9 is _____

Expanded Form

Example   Consider the number 742.

We know that 742 = 7 hundreds + 4 tens + 2 ones
Writing the place values of the digits, we get —
$$7 \text{ hundreds} = 700$$
$$4 \text{ tens} = 40$$
$$2 \text{ ones} = 2$$
Thus, the expanded form of 742 is as shown below :

$$742 = 700 + 40 + 2$$

Expanded Form for a Number Containing Zero

Example   Consider the number 302.

$$302 = 3 \text{ hundreds} + 0 \text{ tens} + 2 \text{ ones}$$
Writing the place values, we get —
$$3 \text{ hundreds} = 300$$
$$0 \text{ tens} = 0$$
$$2 \text{ ones} = 2$$
Thus, the expanded form of 702 is as shown below :

$$702 = 700 + 0 + 2 \quad \text{or} \quad 702 = 700 + 2$$

Exercise

Write the expanded forms of the following :

1. 457 = ◯ + ◯ + ◯
2. 508 = ◯ + ◯ + ◯
3. 654 = ◯ + ◯ + ◯
4. 928 = ◯ + ◯ + ◯
5. 872 = ◯ + ◯ + ◯
6. 184 = ◯ + ◯ + ◯
7. 109 = ◯ + ◯ + ◯
8. 210 = ◯ + ◯ + ◯

Compact Form

To write an expanded number in compact form, we arrange the number under hundreds, tens and ones columns and write the extreme left digits of each term.

Example 1   Write the standard form of 700 + 8.

Hundreds		Tens		Ones
7 hundreds	+	0 tens	+	8 ones
(7)0 0	+	(0)0	+	(8)
↓		↓		↓
7		0		8

= **708**

Example 2   Write the standard form of 100 + 70.

Hundreds		Tens		Ones
1 hundred	+	7 tens	+	0 ones
(1)0 0	+	(7)0	+	(0)
↓		↓		↓
1		7		0

= **170**

Example 3   Write the standard form of 900 + 20 + 4.

Hundreds		Tens		Ones
9 hundreds	+	2 tens	+	4 ones
(9)0 0	+	(2)0	+	(4)
↓		↓		↓
9		2		4

= **924**

Exercise

A. Write the numbers in the compact form.

1. 600 + 8 _____
2. 300 + 40 _____
3. 700 + 50 + 7 _____
4. 600 + 50 + 1 _____
5. 400 + 7 _____
6. 300 + 20 + 4 _____
7. 200 + 80 + 6 _____
8. 100 + 90 + 5 _____
9. 900 + 60 + 2 _____
10. 800 + 1 _____

B. Write the following in standard form :

1. 4 hundreds + 6 tens + 3 ones =
2. 5 hundreds + 0 tens + 6 ones =
3. 8 hundreds + 7 tens + 3 ones =
4. 7 hundreds + 8 tens + 9 ones =
5. 2 hundreds + 5 tens + 7 ones =

C. Write the expanded forms of the following numbers :

1. 625 = ☐ hundreds ☐ tens ☐ ones
2. 901 = ☐ hundreds ☐ tens ☐ one
3. 391 = ☐ hundreds ☐ tens ☐ one
4. 129 = ☐ hundred ☐ tens ☐ ones
5. 97 = ☐ hundreds ☐ tens ☐ ones
6. 685 = ☐ hundreds ☐ tens ☐ ones

3 Addition

Revision : Addition is putting together and counting.
To add means to combine. The sign of addition is '+' (plus).
The answer we get after adding is called the **sum**.

Properties of Additon

1. The sum obtained upon addition of 2 or more numbers remains the same, even after changing their order.

    Example
    $$24 + 32 = 56$$
    $$32 + 24 = 56$$

2. The sum obtained after adding 0 to any number is the number itself.

    Examples
    $$97 + 0 = 97$$
    $$48 + 0 = 48$$

3. The sum obtained after adding 1 to any number is the next number, also called the **successor** of that number.

    Examples
    $$83 + 1 = 84$$
    $$51 + 1 = 52$$

Exercise

1. By actual calculation, prove that the sum of the following remain same after reversing the order.

    (a) $32 + 45$ (b) $95 + 21$ (c) $125 + 3$ (d) $29 + 39$

2. Add the following :

    (a) $83 + 0$ (b) $94 + 0$ (c) $21 + 0$ (d) $45 + 0$

3. Find the successors of the following :

    (a) 25   (b) 39   (c) 123   (d) 145   (e) 44

Addition of Two 2-digit Numbers (without carry over)

Example Add 12 and 15.

```
  T  O
  1  2
+ 1  5
  2  7
```

Method :

Step 1 : Write the tens digit below tens' column and the ones digit below ones' column.

Step 2 : First, add the ones together and write below ones' column.

2 ones + 5 ones = 7 ones

Step 3 : Then, add the tens together and write below tens' column.

1 ten + 1 ten = 2 tens

Ans. 27

Exercise

Add the following.

```
  T O        T O        T O        T O        T O
  3 5        1 3        5 4        4 2        2 3
+ 1 2      + 2 5      + 3 2      + 3 5      + 2 0
```

```
  T O        T O        T O        T O        T O
  4 4        2 5        5 5        7 2        6 0
+ 2 2      + 3 3      + 2 2      + 2 0      + 2 0
```

```
  T O        T O        T O        T O        T O
  3 3        7 9        7 6        9 5        8 5
+ 1 1      + 2 0      + 1 1      + 0 2      + 1 0
```

Addition by Regrouping or Carry Over
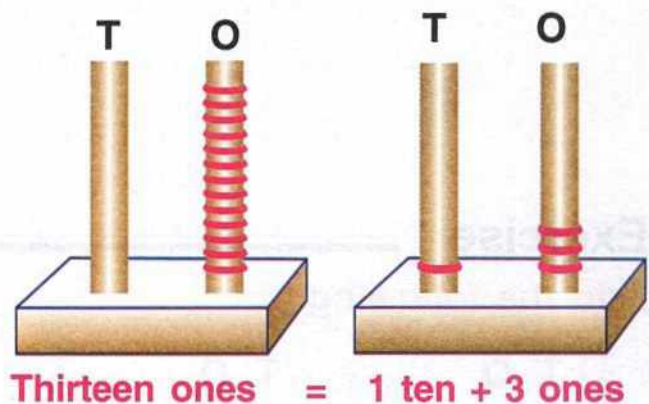
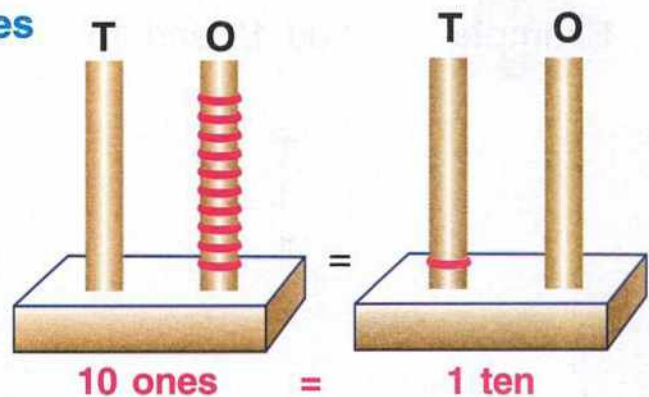## A. Regrouping Ones into Tens and Ones

When adding, if the sum at the ones' place is ten or more, we regroup the ones in such a way that ten ones are carried to the tens' place as one ten and we write the remaining ones at the ones' place.

10 ones = 1 ten

Thus,

13 ones = 10 ones + 3 ones

On regrouping the ones, we write

13 ones = $\boxed{1 \text{ ten} + 3 \text{ ones}}$

Thirteen ones = 1 ten + 3 ones

Example   Regroup 4 tens and 11 ones.

= 4 tens + 11 ones

= 4 tens + 10 ones + 1 one

= 4 tens + 1 ten + 1 one

Ans.   = $\boxed{5 \text{ tens} + 1 \text{ one}}$

Addition of 2-digit Numbers by Regrouping (or carry over)

Example 1   Add 23 and 38.

```
  T O
  2 3
+ 3 8
─────
  6 1
```

$$\begin{array}{r} 2 \text{ tens} + 3 \text{ ones} \\ + \ 3 \text{ tens} + 8 \text{ ones} \\ \hline 5 \text{ tens} + 11 \text{ ones} \end{array}$$

= 5 tens + 10 ones + 1 one

5 tens + 1 ten + 1 one

6 tens + 1 one = 61   **Ans.** 61

Example 2   Add 13, 24 and 35.

```
  T O
   ①
   1 3
   2 4
 + 3 5
 ┌─────┐
 │ 7 2 │
 └─────┘
```

Step 1 :   Add the ones together.
3 ones + 4 ones + 5 ones = 12 ones
12 ones = 10 ones + 2 ones
        = 1 ten + 2 ones
Write 2 under ones' column and carry over
1 ten to the tens' column.

Step 2 :   Add the tens together including the carry over.
1 ten + 2 tens + 3 tens + 1 ten (carry over)
        = 7 tens
Write 7 under tens' column.   **Ans.** 72

Exercise

Add the following by regrouping.

```
  T O              T O              T O              T O              T O
   ○                ○                ○                ○                ○
   8 6              4 7              3 5              7 5              7 5
 + 1 5            + 4 5            + 4 6            + 1 5            + 1 6
 ┌─────┐          ┌─────┐          ┌─────┐          ┌─────┐          ┌─────┐
 └─────┘          └─────┘          └─────┘          └─────┘          └─────┘


  T O              T O              T O              T O              T O
   ○                ○                ○                ○                ○
   5 7              3 9              5 8              5 5              1 9
 + 1 3            + 2 7            + 1 8            + 0 7            + 1 7
 ┌─────┐          ┌─────┐          ┌─────┐          ┌─────┐          ┌─────┐
 └─────┘          └─────┘          └─────┘          └─────┘          └─────┘


  T O              T O              T O              T O              T O
   ○                ○                ○                ○                ○
   4 3              2 3              1 4              2 2              3 8
   1 4              3 5              4 5              5 5              1 4
 + 2 3            + 3 6            + 2 7            + 1 4            + 2 2
 ┌─────┐          ┌─────┐          ┌─────┐          ┌─────┐          ┌─────┐
 └─────┘          └─────┘          └─────┘          └─────┘          └─────┘
```

B. Regrouping Tens into Hundreds and Tens

While adding, if the tens exceed 10, we take ten tens to the hundreds' place as one hundred and write the remaining tens at the tens' place. This method of adding is known as regrouping or carry over.

Example 1 Add 55 and 55.

```
H T O
① ①
  5 5
+ 5 5
1 1 0
```

Step 1 : Add the ones together.
5 ones + 5 ones = 10 ones
10 ones = 1 ten + 0 ones
Write 0 under ones' column and carry over 1 ten to the tens' column.

Step 2 : Add the tens together.
5 ten + 5 tens + 1 ten (carry over) = 11 tens
Now, 11 tens = 10 tens + 1 ten
= 1 hundred + 1 ten
Write 1 under tens' column and carry over 1 hundred to the hundreds' column.

Step 3 : As there is nothing to add in the hundreds' column, copy 1 as it is. **Ans. 110**

Example 2 Add 76, 12 and 13.

```
H T O
① ①
  7 6
  1 2
+ 1 3
1 0 1
```

Step 1 : Add the ones together.
6 ones + 2 ones + 3 ones = 11 ones
11 ones = 10 ones + 1 one
= 1 ten + 1 one
Write 1 under ones' column and carry over 1 ten to the tens' column.

Step 2 : Add the tens together.
7 tens + 1 ten + 1 ten + 1 ten (carry over) = 10 tens
10 tens = 1 hundred + 0 tens
Write 0 under tens' column and carry over 1 hundred to the hundreds' column.

Step 3 : As there is nothing to add in the hundreds' column, copy 1 as it is. **Ans. 101**

Exercise

Add the following by regrouping.

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

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

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

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

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

Addition of a 1-digit or a 2-digit Number to a 3-digit Number (with carry over)

Example 1   Add 5 and 738.

```
  H T O
    ①
  7 3 8
+     5
  7 4 3
```

Step 1 : Add ones digits together.
8 ones + 5 ones = 13 ones.

Since, 13 ones = 1 ten + 3 ones, carry the 1 ten to the tens' column and write 3 under the ones' column.

Step 2 : Add the tens digits together along with the carry over and write the sum under the tens' column.
3 tens + 1 ten (carry over) = 4 tens.

Step 3 : As there is nothing to add in the hundreds' column, copy 7 and write it under the hundreds' column.

Example 2   Add 49 and 683.

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

Step 1 : Add the ones digits together.
3 ones + 9 ones = 12 ones.
Since 12 ones = 1 ten + 2 ones, carry the 1 ten to the tens column and write 2 under the ones' column.

Step 2 : Add the tens digits together (including the carry over).
8 tens + 4 tens + 1 ten (carry over) = 13 tens
Since, 13 tens = 1 hundred + 3 tens, carry over 1 to the hundreds' column and write 3 under the tens' column.

Step 3 : Add the hundreds digits together (including the carry over) and write the sum under the hundreds' column.
6 hundreds + 1 hundred (carry over)
= 7 hundreds   **Ans.** 732

Exercise

Add the following.

H T O	H T O	H T O	H T O	H T O
7 9 3	5 7 7	4 8 9	9 0 8	3 0 3
+ 8	+ 7	+ 5	+ 9	+ 9

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

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

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

Addition of Two 3-digit Numbers

Example 1   Add 324 and 432.

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

- Add the ones together and write the sum below ones' column.

  4 ones + 2 ones = 6 ones
- Add the tens together and write the sum below tens' column.

  2 tens + 3 tens = 5 tens
- Add the hundreds together and write the sum below hundreds' column.

  3 hundreds + 4 hundreds = 7 hundreds

  Ans. 756

Example 2   Add 563 and 359.

```
  H T O
   1 1
  5 6 3
+ 3 5 9
  9 2 2
```

Step 1 : Add the ones digits together.

3 ones + 9 ones = 12 ones.

Since 12 ones = 1 ten + 2 ones, carry over 1 to the tens' column and write 2 under ones' column.

Step 2 : Add the tens digits together (including the carry over)

6 tens + 5 tens + 1 ten (carry over) = 12 tens.

Since 12 tens = 1 hundred + 2 tens, carry 1 to the hundreds' column and write 2 below tens' column.

Step 4 : Add the hundreds digits together (including the carry over)

5 hundreds + 3 hundreds + 1 hundred (carry over) = 9 hundreds

Ans. 922

Exercise

Add the following.

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

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

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

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

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

Addition of Three 3-digit Numbers

Example   Add 149, 271 and 300.

```
  H  T  O
 ①  ①
  1  4  9
  2  7  1
+ 3  0  0
─────────
  7  2  0
```

Step 1 : Add the ones. 9 ones + 1 one = 10 ones = 1 ten + 0 ones. Carry over 1 ten to the tens' column and write 0 under ones' column.

Step 2 : Add the tens. 4 tens + 7 tens + 1 ten (carry over) = 12 tens = 1 hundred + 2 tens
Carry over 1 hundred to the hundreds' column and write 2 under tens' column.

Step 3 : Add the hundreds. 1 hundred + 2 hundreds + 3 hundred + 1 hundred (carry over) = 7 hundreds
Write 7 under hundreds' column.   **Ans.** 720

Exercise

Add the following.

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

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

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

Word Problems

Read the problem carefully. Study what is given and what is asked for. Write the steps clearly and then solve the problem.

Example 1 : A shopkeeper sold 123 books on the first day, 189 books on the second day and 233 books on the third day. How many books did he sell altogether ?

Solution : What is given in the problem ?

Number of books sold by a shopkeeper.

What are we asked to find out ?

Total number of books the shopkeeper sold on three days.

How can we find this out ? By adding.

Books sold on the first day = 123

Books sold on the second day = 189

Books sold on the third day = 233

Total number of books sold in 3 days = 545

Altogether **545** books were sold. **Ans.**

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

Example 2 : 40 men, 48 women and 23 children live in a building. How many people live there altogether ?

Solution :

Number of men = 40

Number of women = 48

Number of children = 23

Total number of people living in the building = 111

111 people live in the building **Ans :**

```
  H T O
  1 1
    4 0
    4 8
+   2 3
-------
  1 1 1
```

37

Exercise

Solve the following in your note book.

1. In a school, class II has 3 sections A, B and C. There are 38 students in class II-A, 36 in class II-B and 39 in class II-C. What is the total number of students in class II ?

2. Shruti paid ₹ 57 for tomatoes and ₹ 65 for onions. How much money did she spend in all ?

3. In a flower shop, there are 72 orchids, 57 roses and 25 lilies. How many flowers are there in the shop ?

4. A restaurant sold 470 bowls of noodles on Tuesday, 309 bowls on Wednesday and 163 bowls on Thursday. How many bowls of noodles were sold in 3 days ?

5. Mom baked some cookies. She gave 436 cookies to my aunt and 250 cookies to the neighbour. She had 75 cookies remaining. How many cookies did mom bake ?

6. A shopkeeper has 28 footballs and 34 cricket balls. How many balls does he have in all ?

7. Harsh scored 65 runs in the first cricket match and 27 runs in the second cricket match. How many runs did he score in total ?

8. There are 47 students in a school bus and 25 students in another school bus. What is the total number of students in the two buses ?

9. In a garden, there are 23 red flowers, 34 yellow flowers and 21 white flowers. What is the total number of flowers in the garden ?

10. A shopkeeper sold 231 books on the first day, 403 books on the second day and 324 books on the third day. How many books did he sell altogether ?

11. 322 men, 312 women and 102 children live in a village. How many people live in the village ?

12. A fruit seller sold 264 apples, 210 oranges and 315 mangoes. How many fruits did he sell altogether ?

4 Subtraction

Taking away a number from another number is called **subtraction**.

Properties of Subtraction

1. The order of numbers is important in subtraction. Usually, only a smaller number is subtracted from a bigger number.

   Example : $9 - 4 = 5$

   $4 - \textcircled{9} =$ Not possible at our level.

2. On subtracting 0 (zero) from a number, the difference is the number itself.

   $33 - 0 = 33$

   $59 - 0 = 59$

3. On subtracting 1 from a number, the difference is the previous number, also called the **predecessor** of the number.

   $19 - 1 = 18$

   $64 - 1 = 63$

Exercise

1. Subtract 0 from the following :

(a) $93 - 0$ (b) $47 - 0$ (c) $77 - 0$ (d) $36 - 0$

(e) $44 - 0$ (f) $3 - 0$ (g) $14 - 0$ (h) $58 - 0$

2. Find the predecessors of the following :

(a) 87   (b) 55   (c) 85   (d) 65   (e) 14

(f) 42   (g) 31   (h) 3   (i) 80   (j) 63

Subtraction of Two 2-digit Numbers

Example :   Subtract 25 from 67.

```
  T  O
  6  7
- 2  5
─────
  4  2
```

Method :

Step 1 : Subtract the ones and write the difference under ones' column.

7 ones – 5 ones = 2 ones

Step 2 : Subtract the tens and write the difference under tens' column.

6 tens – 2 tens = 4 tens.

Ans. 42

Exercise

Subtract the following.

```
  T  O            T  O            T  O            T  O            T  O
  2  9            8  6            9  4            4  9            6  5
- 1  4          - 3  1          - 9  0          - 2  2          - 5  4
┌──────┐        ┌──────┐        ┌──────┐        ┌──────┐        ┌──────┐
│      │        │      │        │      │        │      │        │      │
└──────┘        └──────┘        └──────┘        └──────┘        └──────┘
```

```
  T  O            T  O            T  O            T  O            T  O
  9  9            7  8            8  0            5  9            3  7
- 8  9          - 3  5          - 5  0          - 2  4          - 1  4
┌──────┐        ┌──────┐        ┌──────┐        ┌──────┐        ┌──────┐
│      │        │      │        │      │        │      │        │      │
└──────┘        └──────┘        └──────┘        └──────┘        └──────┘
```

```
  T  O            T  O            T  O            T  O            T  O
  9  6            5  7            6  6            9  3            9  9
- 6  0          - 3  6          - 2  2          - 5  1          - 6  6
┌──────┐        ┌──────┐        ┌──────┐        ┌──────┐        ┌──────┐
│      │        │      │        │      │        │      │        │      │
└──────┘        └──────┘        └──────┘        └──────┘        └──────┘
```

Subtraction of 1-digit and 2-digit Numbers from a 3-digit Number (without borrowing)

Example : 1   Subtract 3 from 528.

```
 H  T  O
⑤ ② 8
 -     3
⑤ ② 5
```

Method :

Step 1 : Subtract the ones and write the difference below the ones' column.

8 ones – 3 ones = 5 ones

Step 2 : As there are no digits to be subtracted from the tens' and the hundreds' columns, copy the digits below in their respective places.   **Ans.** 525

Example : 2

```
 H  T  O
 8  5  9
 -  2  4
 8  3  5
```

Method :

Step 1 : Subtract the ones and write the difference under the ones' column.

9 ones – 4 ones = 5 ones

Step 2 : Subtract the tens and write the difference under the tens' column.

5 tens – 2 tens = 3 tens

Step 3 : As there is no digit to be subtracted from the hundreds' column, copy the digit below as it is.   **Ans.** 835

Exercise

Subtract the following.

```
 H  T  O        H  T  O        H  T  O        H  T  O        H  T  O
 6  4  7        3  4  6        8  4  1        6  5  4        2  4  8
 -  2  5        -  2  2        -  4  1        -     4        -  2  4
```

H T O	H T O	H T O	H T O	H T O
7 8 4	7 1 2	8 9 9	9 9 9	3 7 4
− 2	− 1 1	− 7	− 8 1	− 4 3

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

H T O	H T O	H T O	H T O	H T O
9 8 9	2 3 9	4 7 5	5 7 6	8 8 8
− 7 2	− 2 8	− 7 5	− 6 5	− 8

H T O	H T O	H T O	H T O	H T O
8 5 6	7 9 6	9 5 4	9 8 5	9 5 2
− 2 1	− 4 2	− 2 0	− 2 1	− 1 0

Subtraction of Two 3-digit Numbers (without borrowing)

Example : 1   Subtract 213 from 786.

H T O
7 8 6
− 2 1 3
5 7 3

Method :

Step 1 : Subtract 3 from 6 in ones' column.
6 ones − 3 ones = 3 ones.

Step 2 : Then subtract 1 from 8 in tens' column.
8 tens − 1 ten = 7 tens.

Step 3 : Finally subtract 2 from 7 in hundreds' column.
7 hundreds − 2 hundreds = 5 hundreds.

Ans. 573

Exercise

Subtract the following.

	H T O
	5 8 7
−	1 2 4

	H T O
	6 8 4
−	2 1 3

	H T O
	3 9 0
−	2 5 0

	H T O
	6 4 3
−	3 1 3

	H T O
	9 8 4
−	2 0 0

	H T O
	7 5 6
−	1 2 5

	H T O
	4 4 4
−	3 0 1

	H T O
	5 5 3
−	1 3 2

	H T O
	4 8 2
−	2 1 2

	H T O
	4 6 5
−	3 5 4

	H T O
	8 7 4
−	7 6 3

	H T O
	8 1 3
−	1 1 1

	H T O
	7 8 6
−	6 1 5

	H T O
	9 8 2
−	0 2 1

	H T O
	7 5 3
−	3 0 1

	H T O
	9 9 0
−	7 5 0

	H T O
	6 0 9
−	4 0 3

	H T O
	9 9 9
−	5 6 7

	H T O
	9 8 6
−	8 3 6

	H T O
	8 7 8
−	6 2 4

	H T O
	5 3 6
−	2 1 5

	H T O
	8 4 8
−	6 2 6

	H T O
	3 5 2
−	1 1 1

	H T O
	2 1 8
−	1 0 4

	H T O
	6 6 6
−	2 2 2

Subtraction by Regrouping or Borrowing

A. Regrouping tens into tens and ones.

While subtracting, if the digit at the ones' place is less than the digit to be subtracted, we regroup the tens in such a way that 1 ten is borrowed from the tens' place and added as 10 ones to the existing ones for subtraction.

Example : 1   Subtract 24 from 50.

```
    T   O
   (4) (10)
    5̶   0
 -  2   4
 ┌─────────┐
 │  2   6  │
 └─────────┘
```

Method :

Step 1 : Since 0 < 4, to subtract 4 from 0, we will borrow 1 ten from the tens' column. Now we have 4 tens and 10 ones instead of 5 tens and 0 ones.

Step 2 : Subtract the ones.
10 ones – 4 ones = 6 ones.

Step 3 : Subtract the tens.
4 tens – 2 tens = 2 tens.   **Ans.** 26

Example : 2   Subtract 9 from 768.

```
  H  T  O
     (5)(18)
  7  6̶  8̶
 -       9
  7  5  9
```

Method :

Step 1 : 9 is greater than 8. We cannot subtract 9 from 8 in the ones' column. So we will borrow 1 ten from the tens' column.

Instead of 6 tens and 8 ones, we now have 5 tens and 18 ones.

Step 2 : Subtract the ones and write the difference under the ones column.

18 ones – 9 ones = 9 ones.

Step 3 : As there are no digits to be subtracted from the tens and hundreds' columns, copy the digits below in their respective places.

Ans. 759

Example : 3   Subtract 38 from 645.

```
  H  T  O
     ③ ⑮
  6  4̶  5̶
 -    3  8
┌─────────┐
│ 6  0  7 │
└─────────┘
```

Method :

Step 1 : We have to subtract 8 ones from 5 ones but 5 < 8, so we will borrow 1 ten from the tens' column. Now, 4 tens will become 3 tens and 5 ones will become 15 ones.

Step 2 : Subtract the ones and write the answer in the ones' column.

15 ones − 8 ones = 7 ones.

Step 3 : Subtract the tens and write the answer in the tens' column.

3 tens − 3 tens = 0 tens.

Step 4 : As there is no digit to be subtracted in the hundreds' column, we will copy the same digit.

Ans. 607

Example : 4   Subtract 149 from 798.

```
  H  T  O
     ⑧ ⑱
  7  9̶  8̶
 -  1  4  9
┌─────────┐
│ 6  4  9 │
└─────────┘
```

Method :

Step 1 : We have to subtract 9 ones from 8 ones but, 8 < 9. So, we will borrow 1 ten from the tens' column. Now, 9 tens will become 8 tens and 8 ones will become 18 ones.

Step 2 : Subtract the ones and write the answer in the ones' column.

18 ones − 9 ones = 9 ones.

Step 3 : Subtract the tens and write the answer in the tens' column.

8 tens − 4 tens = 4 tens.

Step 4 : Subtract the hundreds and write the answer in the hundreds' column.

7 hundreds − 1 hundred = 6 hundreds

Ans. 649

Exercise

Subtract the following.

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

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

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

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

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

B. Regrouping Hundreds into Hundreds and Tens

When the digit at the tens' place is less than the digit to be subtracted, we borrow one hundred from the hundreds' place and bring it to the tens' place. Then we add the tens to the existing tens for subtraction.

Example : 1 Subtract 8 from 105.

H	T	O
		9
0	10	15
1	0	5
−		8
	9	7

Method :

Step 1 : As 5 < 8, we will borrow 1 ten from the tens' column.

Step 2 : Since there is 0 tens in the tens' column, we will first borrow 1 hundred from the hundreds' column. Now, 1 hundred and 0 tens become 0 hundreds and 10 tens.

Step 3 : Now that there are 10 tens in tens' column, we will borrow 1 ten for the ones' column. We now have 9 tens and 15 ones instead of 10 tens and 5 ones.

Step 4 : Subtract the ones.
15 ones − 8 ones = 7 ones

Step 5 : As there is nothing to be subtracted from the tens and the hundreds' columns, copy the digits in their respective places.   **Ans.** 97

Example : 2 Subtract 157 from 644.

H	T	O
	13	
5	3	14
6	4	4
− 1	5	7
4	8	7

Method :

Step 1 : Since 4 < 7, we will borrow 1 ten from the tens place. Now, we have 3 tens and 14 ones.

Step 2 : Subtract the ones.
14 ones − 7 ones = 7 ones

Step 3 : Since 3 < 5, we will borrow 1 hundred from the hundreds' column. Now, we have 5 hundreds and 13 tens.

Step 4 : Subtract the tens.
13 tens − 5 tens = 8 tens

Step 5 : Subtract the hundreds.
5 hundreds − 1 hundred = 4 hundreds.
Ans. 487

Exercise

Subtract the following.

H T O
2 0 3
− 1 6 5

H T O
9 0 0
−   7

H T O
7 4 0
−   7 9

H T O
5 0 0
− 1 9 0

H T O
3 8 8
− 1 9 9

H T O
4 0 0
− 2 0 3

H T O
6 0 4
− 1 3 1

H T O
7 4 2
− 1 7 6

H T O
9 6 5
− 5 8 8

H T O
4 5 4
− 1 8 2

H T O
1 0 1
−   3 9

H T O
5 2 3
− 2 3 9

H T O
9 9 5
− 5 7 7

H T O
7 5 3
−   1 9

H T O
8 1 7
− 1 9 9

H T O
9 5 1
−   1 8

H T O
7 7 7
−   8 8

H T O
5 2 8
− 5 5 9

H T O
6 6 7
−   5 8

H T O
7 9 8
− 1 1 9

Word Problems

Read the problem. Understand clearly what is given and what is to be found. Write the steps properly and then solve the problem.

Example 1 : A book has 316 pages. Pinky has read 148 pages. How many pages are yet to be read ?

Solution :

Total pages in the book $=$ 316

Number of pages Pinky has read $=$ 148

Number of pages yet to be read $=$ 316 – 148

$=$ 168

Ans : Pinky is yet to read **168** pages.

Example 2 : A plane carried 744 passengers on one day. The next day it carried 872 passengers. How many more passengers did the plane carry on the second day?

Solution :

Passengers on the second day = 872

Passengers on the first day = 744

Difference in the number of passengers = 872 – 744

$=$ 128

Ans : 128 more passengers were carried on the second day.

Exercise

Solve the following in your note book.

1. John has 8 sweets. He gives 3 sweets to Sam. How many sweets are left with John ?

2. There are 36 mangoes in a basket. Out of these, 15 mangoes are bad. How many good mangoes are there in the basket ?

3. Manoj bought 20 chocolates and ate 5. How many chocolates are left with him ?

4. There were 130 fishes in a lake. A fisherman took away 36 of them. How many fishes were left in the lake ?

5. There were 196 apples on a tree. Out of these, 47 apples fell down. How many apples are there on the tree now ?

6. Sapna had ₹ 980. She spent ₹ 280 to buy a doll. How much money does she have now ?

7. There were 372 children in a fair. Out of these, 190 children went back home. How many children are left in the fair ?

8. There were 650 students in the school play ground. 56 students went into the class room. How many students are left on the ground ?

9. There were 625 students in a school. Of these, 299 are girls. How many boys are there ?

10. In an orchard, there were 327 apple trees. Of these 159 were destroyed in a storm. How many trees are left now ?

11. Prem is reading a book of 659 pages. He has finished reading 345 pages. How many pages are still to be read ?

12. Raju bought 456 bottles of milk and sold 289 bottles. How many bottles of milk are left with him ?

5 Mixed Problems

Addition and Subtraction

Example 1 : Solve : 365 + 265 − 432.

```
    3 6 5
  + 2 6 5
  -------
    6 3 0
  − 4 3 2
  -------
    1 9 8
```

METHOD

Step 1 : First add the numbers 365 and 265.

365 + 265 = 630

Step 2 : Subtract 432 from 630.

630 − 432 = 198

Ans. 198

Example 2 : Solve : 618 + 297 − 453.

```
    6 1 8
  + 2 9 7
  -------
    9 1 5
  − 4 5 3
  -------
    4 6 2
```

METHOD

Step 1 : First add 618 and 297.

618 + 297 = 915

Step 2 : Subtract 453 from 915.

915 − 453 = 462

Ans. 462

Exercise

A. Solve the following in your notebook.

1. 389 + 497 − 234 = ...
2. 59 + 380 − 89 = ...
3. 149 + 456 − 324 = ...
4. 198 + 456 − 321 = ...
5. 234 + 562 − 189 = ...
6. 459 + 232 − 503 = ...
7. 609 + 321 − 719 = ...
8. 321 + 95 − 123 = ...

B. Fill in the circles

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

H T O	H T O	H T O	H T O	H T O
5 9 2	6 9 8	4 5 6	○ 4 1	4 ○ 9
− 4 ○ 1	− 4 5 ○	− 2 ○ 4	− 1 9 9	− 2 1 8
1 7 1	**2 4 0**	**2 2 2**	**1 4 2**	**2 8 1**

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

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

52

Word Problems

Exercise

Solve the following in your notebook.

1. There are 55 students in class IIA, 48 students in class IIB and 53 students in class IIC. How many students are there in all the three sections ?

2. 159 people went to see a film on Friday, 235 people went to see the film on Saturday and 478 people went to see it on Sunday. How many people saw the film on these three days ?

3. Among the 889 people living in a village, 339 were men and 319 were women. How many children were there in the village ?

4. Find the sum of 238, 321 and 299.

5. In a box there are 168 blue pencils and 283 red pencils. How many pencils are there in the box ?

6. There were 154 people living in a campus. 21 of them were men, 100 of them were women and the rest were children. How many children were living in the campus ?

7. There are 947 boys and 813 girls in a school. How many more boys are there ?

8. Find the sum of 238, 321 and 299.

9. By how much is 837 more than 431 ?

10. Anu, Vini and Varsha sold 253, 315 and 325 tickets for the school play. How many tickets did they sell altogether ?

11. After selling 545 mangoes, the fruit seller still has 284 mangoes left with him. How many mangoes did he have at first ?

12. There were 150 people present for the morning show, 325 for the afternoon show and 375 for the night show. How many people were there on that day for the show ?

13. There are 600 students in a school, where 299 students are girls. How many boys are there ? 8 more boys join the school. How many boys are there now in the school ?

14. There were 96 chocolate and cream cakes in a shop. If there were 57 chocolate cakes, how many cream cakes were there ? 14 chocolate cakes were sold. How many chocolate cakes were left in the shop ?

15. There were 450 sheets of glazed paper. In the first week, 150 sheets were used. In the second week, 92 sheets were used. How many sheets of glazed paper were left ?

16. A shop has 29 cycles. 70 more cycles were received. Then 52 cycles were sold. How many cycles are left in the shop ?

17. A shop had 126 kg of potatoes. 7 kg were rotten and were thrown away. 96 kg were sold. How many kg of potatoes were left in the shop ?

18. Mary had in her desk, 3 pencils, 4 rulers, 2 rubbers and 5 sharpeners. How many things were in Mary's desk ? She took out 1 pencil, 1 rubber and 1 ruler. How many things were left in her desk?

19. A farmer had 32 horses, 91 cows and 28 pigs on his farm. 11 cows and 15 pigs ran away. How many animals were left on his farm ?

20. Ashok has 62 music cassettes. His friend borrows 15 cassettes from him but returns only 11 of them. How many cassettes does Ashok have now ?

6 Multiplication

Revision

Multiplication is repeated addition. When two numbers are multiplied, the answer is called the **product**. The sign of multiplication is '**x**'.

The number which is being multiplied is called **multiplicand**. The number by which the multiplicand is multiplied is called the **multiplier**.

Example

$$4 \times 3 = 12$$

Multiplicand   Multiplier   Product

Construction of Multiplication Tables

We can construct multiplication tables using different methods.

1. By using repeated addition

When we add a same number several times, we can express it as a process of multiplication and can construct a table.

Following is the table of 2 using repeated addition method.

2	1 two is **2**.	2 × 1 = **2**
2 + 2	2 twos are **4**.	2 × 2 = **4**
2 + 2 + 2	3 twos are **6**.	2 × 3 = **6**
2 + 2 + 2 + 2	4 twos are **8**.	2 × 4 = **8**
2 + 2 + 2 + 2 + 2	5 twos are **10**.	2 × 5 = **10**
2 + 2 + 2 + 2 + 2 + 2	6 twos are **12**.	2 × 6 = **12**
2 + 2 + 2 + 2 + 2 + 2 + 2	7 twos are **14**.	2 × 7 = **14**
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	8 twos are **16**.	2 × 8 = **16**
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	9 twos are **18**.	2 × 9 = **18**
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	10 twos are **20**.	2 × 10 = **20**

OR   OR

Similarly, we can construct the table of 3 as follows.

3	1 three is **3**.	3 × 1 = **3**
3 + 3	2 threes are **6**.	3 × 2 = **6**
3 + 3 + 3	3 threes are **9**.	3 × 3 = **9**
3 + 3 + 3 + 3	4 threes are **12**.	3 × 4 = **12**
3 + 3 + 3 + 3 + 3	5 threes are **15**.	3 × 5 = **15**
3 + 3 + 3 + 3 + 3 + 3	**OR** 6 threes are **18**. **OR**	3 × 6 = **18**
3 + 3 + 3 + 3 + 3 + 3 + 3	7 threes are **21**.	3 × 7 = **21**
3 + 3 + 3 + 3 + 3 + 3 + 3 + 3	8 threes are **24**.	3 × 8 = **24**
3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3	9 threes are **27**.	3 × 9 = **27**
3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3	10 threes are **30**.	3 × 10 = **30**

Similarly, we can construct the tables of digits 4, 5, 6, 7, 8, 9, 10 and so on.

2. Forming multiplication tables using skip counting

To construct the table of 2, we start counting from 2 and then skip one number while counting other numbers.

Look at the multiplication table of 2 below :
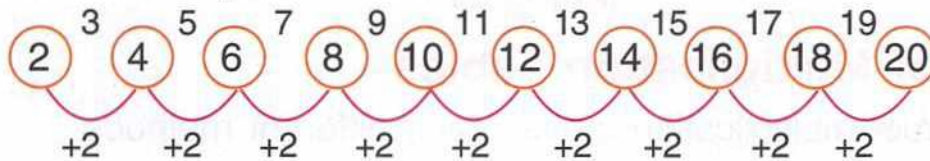
Similarly the multiplication table of 5 is :
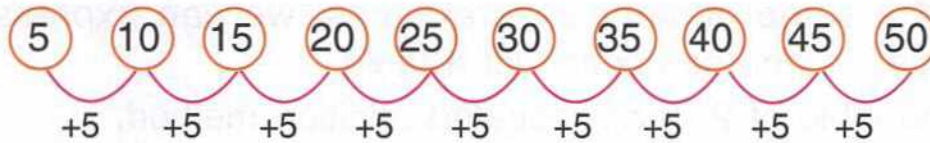
3. Construction of multiplication tables using sticks

(a) To make the multiplication table of 4. We proceed as follows :

• Take 4 sticks (broom sticks/straws and place them horizontally as shown).
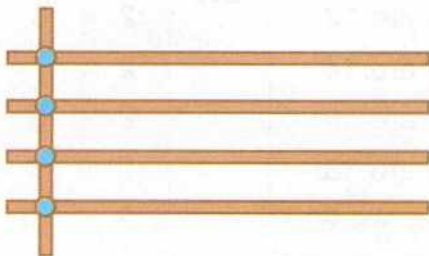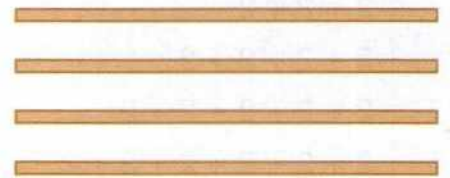
• Put another stick on it vertically. Mark the points where the vertical stick touches the other 4 sticks. This shows 4 horizontal sticks × 1 vertical stick
= 4 × 1 = 4.

- Similarly put one more vertical stick and mark the points at which it touches the four horizontal sticks.
  Add all the points of contact between the 6 sticks.
  There are 8 such points.
  Hence $4 \times 2 = 8$.

- Similarly by adding more sticks vertically one by one, we will get the 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 |
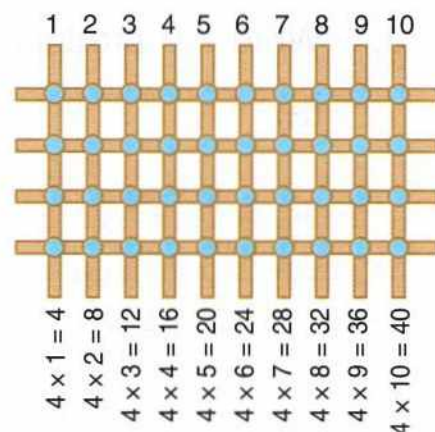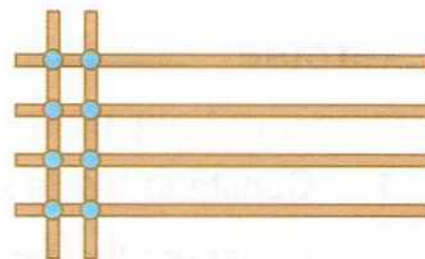
(b) Construction of multiplication table of 3.

We proceed as follows :

- Take 3 sticks (broom sticks/straws) and place them horizontally as shown and put another stick on it vertically. Mark the points where the vertical stick touches on the other 3 sticks. This shows 3 horizontal sticks × 1 vertical stick = $3 \times 1 = 3$.
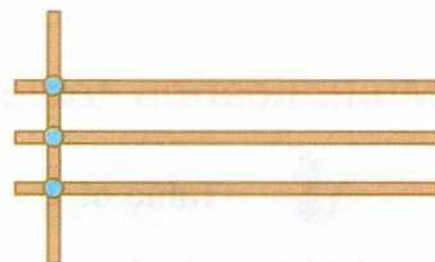
- Similarly put one more vertical stick and mark the points at which it touches the horizontal sticks. Add all the points of contact between the five sticks. There are 6 such points. Hence $3 \times 2 = 6$.
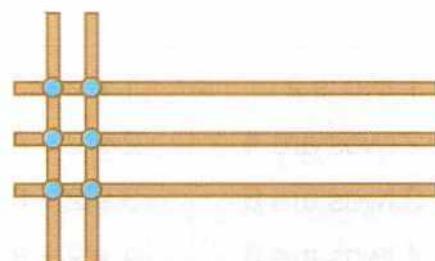
- Similarly by adding more sticks vertically one by one, we will get the table of 3.

| 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 |
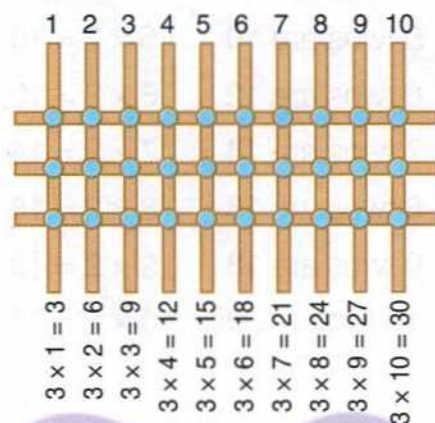
Exercise

Practise in your note book.

1. Construct the tables of 4 and 6 by skip counting.

2. Construct the table of 7 by repeated addition.

3. Write the product as shown by the sticks in the given figures.
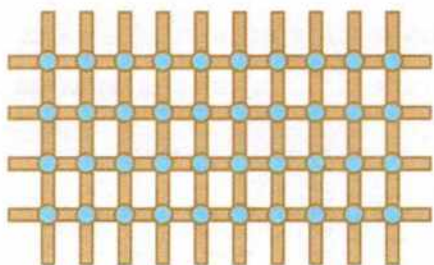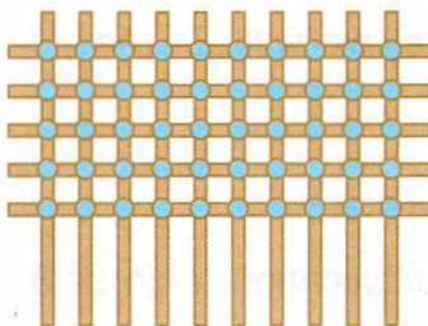
(a)   (b)   (c)
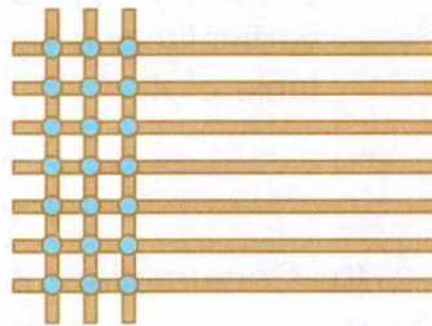
Multiplication tables

Table of 2

Multiplying by 2	Multiplication table	
1 two is **2**	$1 \times 2 = 2$	$2 \times 1 = 2$
2 twos are **4**	$2 \times 2 = 4$	$2 \times 2 = 4$
3 twos are **6**	$3 \times 2 = 6$	$2 \times 3 = 6$
4 twos are **8**	$4 \times 2 = 8$	$2 \times 4 = 8$
5 twos are **10**	$5 \times 2 = 10$	$2 \times 5 = 10$
6 twos are **12**	$6 \times 2 = 12$	$2 \times 6 = 12$
7 twos are **14**	$7 \times 2 = 14$	$2 \times 7 = 14$
8 twos are **16**	$8 \times 2 = 16$	$2 \times 8 = 16$
9 twos are **18**	$9 \times 2 = 18$	$2 \times 9 = 18$
10 twos are **20**	$10 \times 2 = 20$	$2 \times 10 = 20$

Table of 3

Multiplying by 3	Multiplication table	
1 three is **3**	$1 \times 3 = 3$	$3 \times 1 = 3$
2 threes are **6**	$2 \times 3 = 6$	$3 \times 2 = 6$
3 threes are **9**	$3 \times 3 = 9$	$3 \times 3 = 9$
4 threes are **12**	$4 \times 3 = 12$	$3 \times 4 = 12$
5 threes are **15**	$5 \times 3 = 15$	$3 \times 5 = 15$
6 threes are **18**	$6 \times 3 = 18$	$3 \times 6 = 18$
7 threes are **21**	$7 \times 3 = 21$	$3 \times 7 = 21$
8 threes are **24**	$8 \times 3 = 24$	$3 \times 8 = 24$
9 threes are **27**	$9 \times 3 = 27$	$3 \times 9 = 27$
10 threes are **30**	$10 \times 3 = 30$	$3 \times 10 = 30$

Table of 4

Multiplying by 4 — **Multiplication table**

1 four is **4**	$1 \times 4 = 4$	$4 \times 1 = 4$
2 fours are **8**	$2 \times 4 = 8$	$4 \times 2 = 8$
3 fours are **12**	$3 \times 4 = 12$	$4 \times 3 = 12$
4 fours are **16**	$4 \times 4 = 16$	$4 \times 4 = 16$
5 fours are **20**	$5 \times 4 = 20$	$4 \times 5 = 20$
6 fours are **24**	$6 \times 4 = 24$	$4 \times 6 = 24$
7 fours are **28**	$7 \times 4 = 28$	$4 \times 7 = 28$
8 fours are **32**	$8 \times 4 = 32$	$4 \times 8 = 32$
9 fours are **36**	$9 \times 4 = 36$	$4 \times 9 = 36$
10 fours are **40**	$10 \times 4 = 40$	$4 \times 10 = 40$

Table of 5

Multiplying by 5 — **Multiplication table**

1 five is **5**	$1 \times 5 = 5$	$5 \times 1 = 5$
2 fives are **10**	$2 \times 5 = 10$	$5 \times 2 = 10$
3 fives are **15**	$3 \times 5 = 15$	$5 \times 3 = 15$
4 fives are **20**	$4 \times 5 = 20$	$5 \times 4 = 20$
5 fives are **25**	$5 \times 5 = 25$	$5 \times 5 = 25$
6 fives are **30**	$6 \times 5 = 30$	$5 \times 6 = 30$
7 fives are **35**	$7 \times 5 = 35$	$5 \times 7 = 35$
8 fives are **40**	$8 \times 5 = 40$	$5 \times 8 = 40$
9 fives are **45**	$9 \times 5 = 45$	$5 \times 9 = 45$
10 fives are **50**	$10 \times 5 = 50$	$5 \times 10 = 50$

Table of 6

Multiplying by 6 — **Multiplication table**

1 six is **6**	$1 \times 6 = 6$	$6 \times 1 = 6$
2 sixes are **12**	$2 \times 6 = 12$	$6 \times 2 = 12$
3 sixes are **18**	$3 \times 6 = 18$	$6 \times 3 = 18$
4 sixes are **24**	$4 \times 6 = 24$	$6 \times 4 = 24$
5 sixes are **30**	$5 \times 6 = 30$	$6 \times 5 = 30$
6 sixes are **36**	$6 \times 6 = 36$	$6 \times 6 = 36$
7 sixes are **42**	$7 \times 6 = 42$	$6 \times 7 = 42$
8 sixes are **48**	$8 \times 6 = 48$	$6 \times 8 = 48$
9 sixes are **54**	$9 \times 6 = 54$	$6 \times 9 = 54$
10 sixes are **60**	$10 \times 6 = 60$	$6 \times 10 = 60$

Table of 7

Multiplying by 7 — **Multiplication table**

1 seven is **7**	$1 \times 7 = 7$	$7 \times 1 = 7$
2 sevens are **14**	$2 \times 7 = 14$	$7 \times 2 = 14$
3 sevens are **21**	$3 \times 7 = 21$	$7 \times 3 = 21$
4 sevens are **28**	$4 \times 7 = 28$	$7 \times 4 = 28$
5 sevens are **35**	$5 \times 7 = 35$	$7 \times 5 = 35$
6 sevens are **42**	$6 \times 7 = 42$	$7 \times 6 = 42$
7 sevens are **49**	$7 \times 7 = 49$	$7 \times 7 = 49$
8 sevens are **56**	$8 \times 7 = 56$	$7 \times 8 = 56$
9 sevens are **63**	$9 \times 7 = 63$	$7 \times 9 = 63$
10 sevens are **70**	$10 \times 7 = 70$	$7 \times 10 = 70$

Table of 8

Multiplying by 8	Multiplication table	
1 eight is **8**	1 × 8 = **8**	8 × 1 = **8**
2 eights are **16**	2 × 8 = **16**	8 × 2 = **16**
3 eights are **24**	3 × 8 = **24**	8 × 3 = **24**
4 eights are **32**	4 × 8 = **32**	8 × 4 = **32**
5 eights are **40**	5 × 8 = **40**	8 × 5 = **40**
6 eights are **48**	6 × 8 = **48**	8 × 6 = **48**
7 eights are **56**	7 × 8 = **56**	8 × 7 = **56**
8 eights are **64**	8 × 8 = **64**	8 × 8 = **64**
9 eights are **72**	9 × 8 = **72**	8 × 9 = **72**
10 eights are **80**	10 × 8 = **80**	8 × 10 = **80**

Table of 9

Multiplying by 9	Multiplication table	
1 nine is **9**	1 × 9 = **9**	9 × 1 = **9**
2 nines are **18**	2 × 9 = **18**	9 × 2 = **18**
3 nines are **27**	3 × 9 = **27**	9 × 3 = **27**
4 nines are **36**	4 × 9 = **36**	9 × 4 = **36**
5 nines are **45**	5 × 9 = **45**	9 × 5 = **45**
6 nines are **54**	6 × 9 = **54**	9 × 6 = **54**
7 nines are **63**	7 × 9 = **63**	9 × 7 = **63**
8 nines are **72**	8 × 9 = **72**	9 × 8 = **72**
9 nines are **81**	9 × 9 = **81**	9 × 9 = **81**
10 nines are **90**	10 × 9 = **90**	9 × 10 = **90**

Table of 10

Multiplying by 10	Multiplication table	
1 ten is **10**	1 × 10 = **10**	10 × 1 = **10**
2 tens are **20**	2 × 10 = **20**	10 × 2 = **20**
3 tens are **30**	3 × 10 = **30**	10 × 3 = **30**
4 tens are **40**	4 × 10 = **40**	10 × 4 = **40**
5 tens are **50**	5 × 10 = **50**	10 × 5 = **50**
6 tens are **60**	6 × 10 = **60**	10 × 6 = **60**
7 tens are **70**	7 × 10 = **70**	10 × 7 = **70**
8 tens are **80**	8 × 10 = **80**	10 × 8 = **80**
9 tens are **90**	9 × 10 = **90**	10 × 9 = **90**
10 tens are **100**	10 × 10 = **100**	10 × 10 = **100**

Exercise

Fill in the products without looking at the tables.

(a)   6   ×   8   =

(b)   7   ×   7   =

(c)   9   ×   6   =

(d)   8   ×   10   =

(e)   8   ×   9   =

(f)   7   ×   9   =

(g)   6   ×   10   =

(h)   7   ×   8   =

(i)   6   ×   9   =

Properties of Multiplication

1. The product of 2 numbers remains the same even after changing the order of the numbers.

$$5 \times 9 = 45 \qquad 9 \times 5 = 45$$

2. When a number is multiplied by 1, the product is the number itself.

$$4 \times 1 = 4 \qquad 11 \times 1 = 11$$

3. When a number is multiplied by 0, the product is always 0.

$$3 \times 0 = 0 \qquad 12 \times 0 = 0$$

Exercise

1. Calculate and prove that the products of the following remain the same even after reversing the order.
   - (a) 7×9 ; 9×7
   - (b) 9×5 ; 5×9
   - (c) 4×3 ; 3×4
   - (d) 5×4 ; 4×5
   - (e) 3×7 ; 7×3
   - (f) 2×6 ; 6×2

2. Multiply the following by 1 :
   - (a) 9
   - (b) 8
   - (c) 6
   - (d) 4

3. Find the product of the following :
   - (a) 16×0
   - (b) 8×0
   - (c) 6×0
   - (d) 2×0
   - (e) 10×0

Let Us Revise

1. There are 2 ponds. Each pond has 4 ducks. How many ducks are there in the two ponds ?
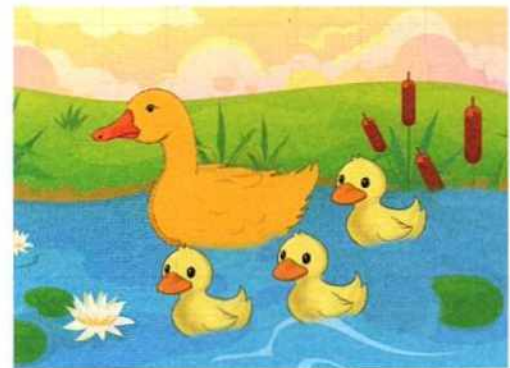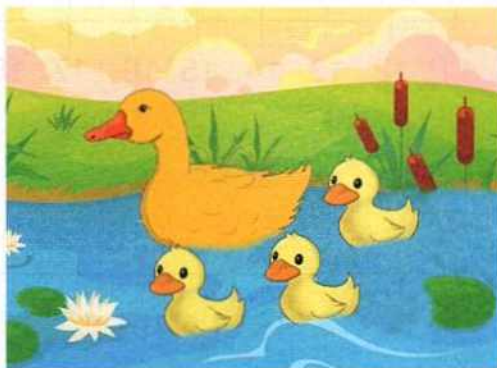
$4 + 4 = \boxed{}$ OR 2 times 4 equals $\boxed{}$

There are $\boxed{}$ × $\boxed{}$ = $\boxed{}$ ducks.

2. A pizza has 6 slices. How many slices will 4 pizzas have ?

$\boxed{} + \boxed{} + \boxed{} + \boxed{} = \boxed{}$

OR $\boxed{} \times \boxed{} = \boxed{}$ slices.

3. Multiplication of 2 by 6 using a number line.
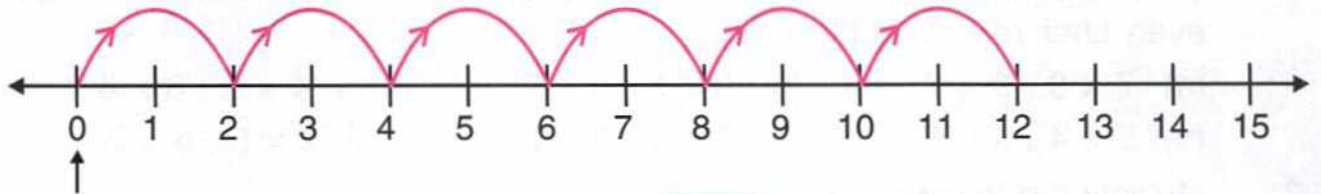
$2 + 2 + 2 + 2 + 2 + 2 = \boxed{}$

$6 \times 2 = \boxed{}$

4. Multiply the following using a number line.

(a) 5 by 4

(b) 2 by 6

(c) 3 by 6

62
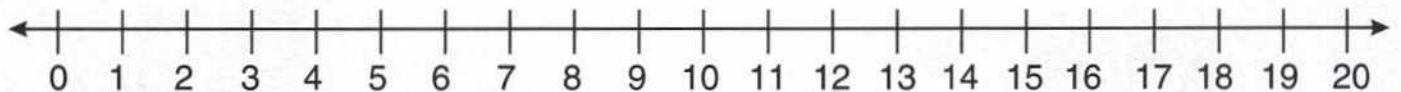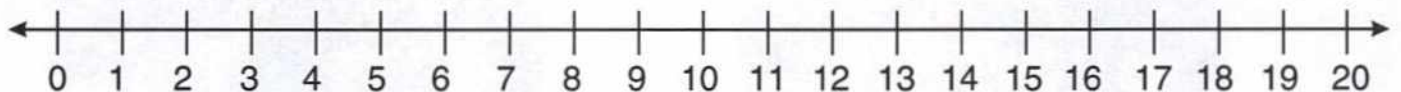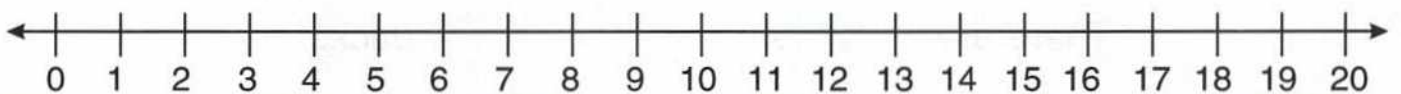
5. Recollect the tables and match the following.

(a)	5 × 3	10	4 × 3
(b)	2 × 5	8	6 × 3
(c)	3 × 4	18	3 × 5
(d)	4 × 2	28	7 × 4
(e)	3 × 6	9	5 × 2
(f)	4 × 7	20	2 × 4
(g)	3 × 9	6	4 × 5
(h)	3 × 2	15	3 × 3
(i)	5 × 4	12	9 × 3
(j)	3 × 3	27	2 × 3

6. Count in threes and fill in the boxes.

0	3	6	☐	☐	☐

18	21	☐	☐	☐	☐

36	☐	☐	☐	☐	☐
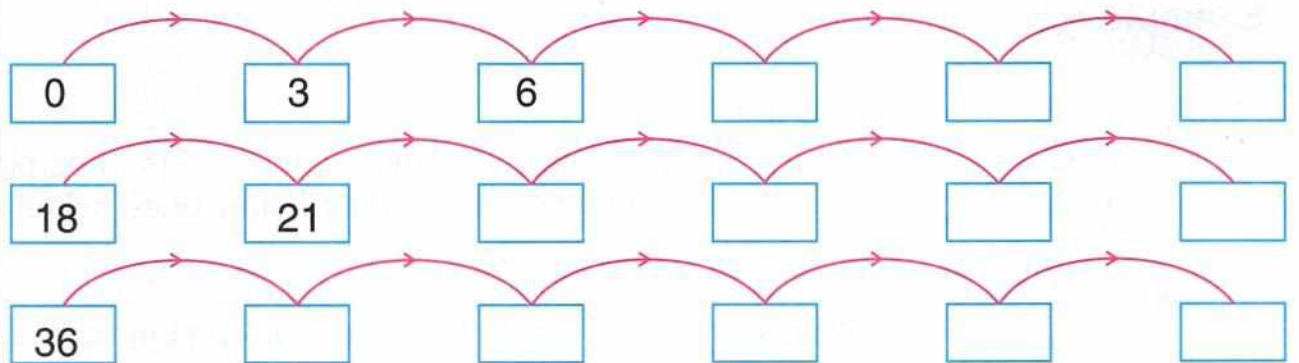
7. Count in fives and fill in the circles.

0 $\xrightarrow{+5}$ 5 $\xrightarrow{+5}$ 10 → ◯ → ◯ → ◯ → ◯

30 → ◯ → ◯ → ◯ → ◯ → ◯ → ◯

45 → ◯ → ◯ → ◯ → ◯ → ◯ → ◯

65 → ◯ → ◯ → ◯ → ◯ → ◯ → ◯
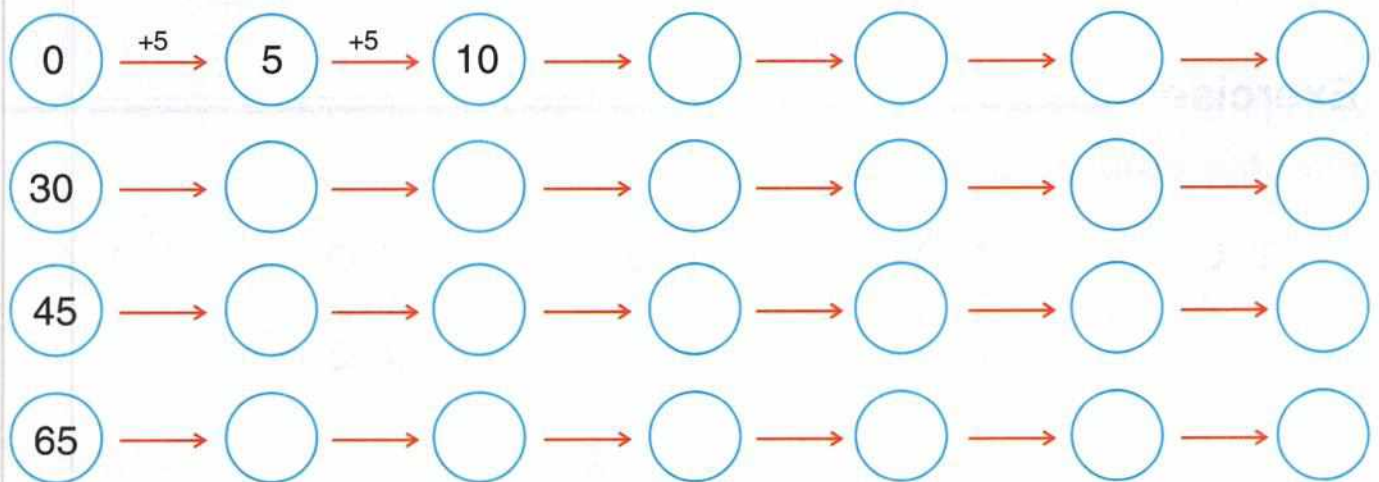
Multiplication of Two-digit Numbers by One-digit Number (without carry over)

To understand the multiplication of a two-digit number by a one-digit number, see the following examples.

Example : 1   Multiply 43 by 2.

```
  T O
  4 3
×   2
─────
  8 6
```
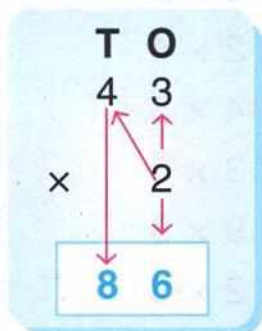
Method :

Step 1 : First multiply the digit 3 which is in ones' place by 2 and write the product below ones' column.

So, $2 \times 3 = 6$

Step 2 : Then multiply the digit 4 which is in tens' place by 2 and write the product below tens' column.

$2 \times 4 = 8$

Ans : 86

Example : 2   Multiplying 32 by 3.

```
  T O
  3 2
×   3
─────
  9 6
```
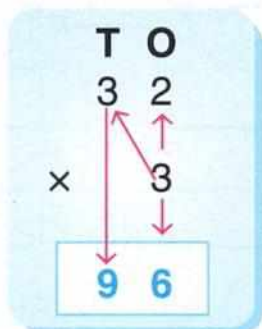
Method :

Step 1 : First multiply the digit 2 which is in ones' place by 3 and write the product below ones' column.

$3 \times 2 = 6$

Step 2 : Then multiply the digit 3 which is in tens' place by 3 and write the product below tens' column.

$3 \times 3 = 9$

Ans : 96

Exercise

Find the product of the following.

```
  T O          T O          T O          T O          T O
  1 2          2 3          1 1          4 2          2 1
× 3          × 2          × 5          × 2          × 4
─────        ─────        ─────        ─────        ─────
```

T O	T O	T O	T O	T O
3 1	2 2	2 4	4 0	4 3
× 3	× 4	× 2	× 2	× 2

T O	T O	T O	T O	T O
1 4	2 2	4 4	2 3	3 2
× 2	× 3	× 2	× 3	× 2

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

Multiplication of Two-digit Numbers by a One-digit Number (with carry over)

To understand the multiplication of a two-digit number by a one-digit number, see the following examples.

Example : 1   Multiply 15 by 4.

```
  T O
  (2)
  1 5
×   4
 ┌─────┐
 │ 6 0 │
 └─────┘
```

Method :

Step 1 : Start with the ones. Multiply 5 with 4.
5 ones × 4 ones = 20 ones = 2 tens + 0 ones.
Write 0 under ones' column and carry over 2 tens to the tens' column.

Step 2 : Multiply 1 with 4 and add the carry over to the product.
1 ten × 4 ones = 4 tens + 2 tens (carry over)
= 6 tens
Write 6 under tens' column.
Ans. 60

Example : 2   Multipliy 36 by 6.

```
      T  O
    ② ③
      3  6
  ×      6
  _____
    2  1  6
```
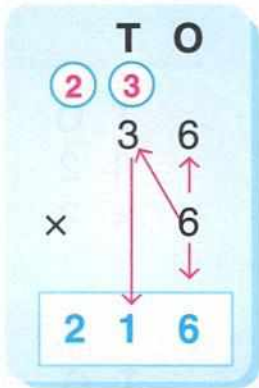
Method :

Step 1 : Start with the ones. Multiply 6 with 6.

6 ones × 6 ones = 36 ones = 3 tens + 6 ones.

Write 6 under ones' column and carry over 3 tens to the tens' column.

Step 2 : Multiply 3 by 6 and add the carry over to the product.

3 tens × 6 ones = 18 tens + 3 tens (carry over)

= 21 tens

= 2 hundreds + 1 ten

Write 1 under tens' column and carry over 2 hundreds to the hundreds' column.

Ans. 216

Exercise

Multiply the following.

	T O	T O	T O	T O	T O
	○	○	○	○	○
	4 5	3 3	1 4	2 8	3 9
	× 2	× 5	× 7	× 8	× 2

	T O	T O	T O	T O	T O
	○	○	○	○	○
	7 9	5 3	8 2	1 9	2 6
	× 2	× 7	× 6	× 5	× 9

	T O	T O	T O	T O	T O
	○	○	○	○	○
	6 8	9 9	5 5	8 7	9 8
	× 4	× 3	× 5	× 5	× 3

Word Problems

Example 1 In a set of sketch pens, there are 12 sketch pens. Ravi has 7 such sets. How many sketch pens does he have in all ?

Solution : Number of sketch pens in one set = 12

Number of sets = 7

Number of sketch pens in 7 sets = 12 × 7 = 84

Ans. Ravi has 84 sketch pens

Example 2 58 passengers can travel in a bus. How many passengers can travel in 5 such buses ?

Solution : Number of passengers in one bus = 58

Number of buses = 5

Number of passengers who can travel in 5 buses

= 58 × 5 = 290

Ans. 290 passengers can travel in 5 buses.

Example 3 A sack contains 92 potatoes. How many potatoes do 7 such sacks contain ?

Solution : Number of potatoes in one sack = 92

Number of sacks = 7

Number of potatoes in 7 sacks = 92 × 7

= 644

Ans. 7 sacks contain 644 potatoes.

Exercise

1. A box contains 9 chocolates. How many chocolates are there in 8 such boxes ?

2. A book costs ₹ 15. How much will 7 such books cost ?

3. A cricket team has 11 players. How many players are there in 5 such teams ?

4. An apple costs ₹ 5. How much will 10 apples cost ?

5. There are 7 baskets of mangoes. Each basket has 9 mangoes. How many mangoes are there in all ?

6. A match box has 55 match sticks. How many match sticks do 6 such boxes contain ?

7. A man sells 79 tickets in a day. How many tickets does he sell in 9 days ?

8. A jeep carries 18 passengers in a single trip. How many passengers will it carry in 3 trips ?

9. A textbook has 107 pages. How many pages are there in 8 such books ?

10. A bag contains 85 chocolates. How many chocolates do 9 such bags contain ?

11. In a school there are 42 classrooms. There are 4 fans in each classroom. How many fans are there in the school ?

12. There are 75 books kept on a shelf. There are 8 shelves. How many books are there in all ?

13. A box contains 25 apples. There are 9 boxes. How many apples are there in all ?

14. In a jar there are 25 sweets. How many sweets are there in 5 such jars ?

15. In an orchard, there are 61 apple trees. Each tree has 9 apples. How many apples are there in all ?

7 Division

Division is Repeated Subtraction

- The number which is being divided is the **dividend** and the number by which the dividend is divided is called the **divisor**.
- The answer obtained after division is called the **quotient**.

Example

$12 \div 3 = 4$

Here, 12 is the **Dividend**.

3 is the **Divisor**.

4 is the **Quotient**.

0 is the **Remainder**.

$$
\begin{array}{r}
4 \leftarrow \text{Quotient} \\
\text{Divisor} \longrightarrow 3 \overline{)12} \leftarrow \text{Dividend} \\
-12 \\
\hline
0 \leftarrow \text{Remainder}
\end{array}
$$

Properties of Division

1. When any number is divided by itself, the quotient is 1.

   $6 \div 6 = 1$ $\qquad\qquad$ $11 \div 11 = 1$

2. When any number is divided by 1, the quotient is the number itself.

   $7 \div 1 = 7$ $\qquad\qquad$ $15 \div 1 = 15$

3. A number cannot be divided by 0.

   $9 \div 0$ is not possible.

Exercise

1. Verify if the quotient is 1.

   (a) $6 \div 6$ $\qquad$ (b) $7 \div 7$ $\qquad$ (c) $4 \div 4$ $\qquad$ (d) $9 \div 9$

2. Find the quotient if the divisor is 1.

   (a) 45 $\qquad$ (b) 22 $\qquad$ (c) 31 $\qquad$ (d) 9

Let Us revise

1. A basket has 18 apples which are to be shared equally among 3 children. How many apples will each child get ?

```
  1 8
– 3      ← ①
  1 5
– 3      ← ②
  1 2
– 3      ← ③
   9
– 3      ← ④
   6
– 3      ← ⑤
   3
– 3      ← ⑥
   0
```

Each child will get ⬜ apples.

2. Surbhi wishes to share 15 pencils equally among her 5 friends. How many pencils will each friend get ?
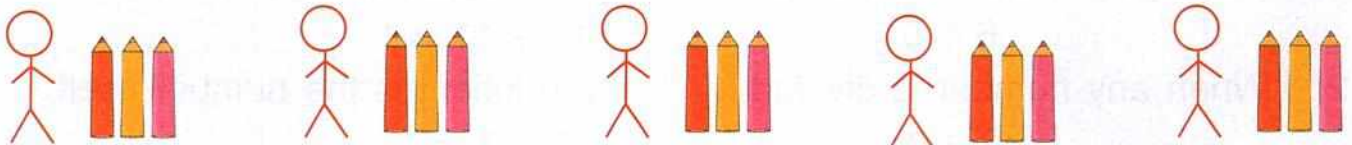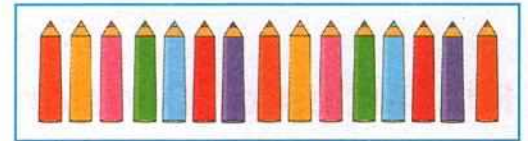
Everyone has _____ pencils.

We write $15 \div 5 =$ _____

3. Put 10 birds equally in 2 nests. How many birds will be there in each nest ?
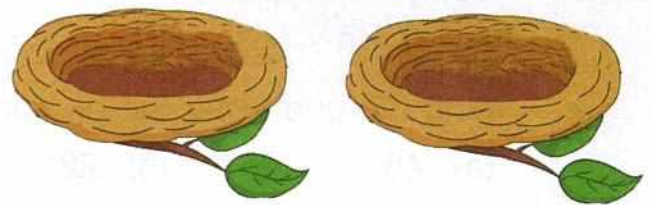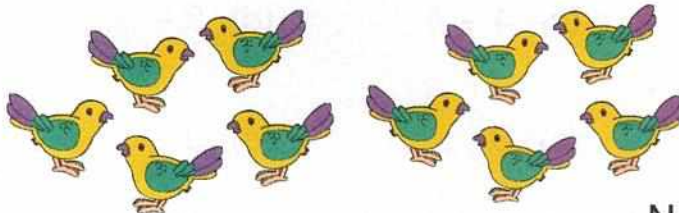
Nest 1 : ___ birds.   Nest 2 : ___ birds.

4. $15 \div 5 = \boxed{}$. To show this division on a number line, we jump 5 divisions from 15 every time until we reach 0. How many times have we jumped to reach 0 ?
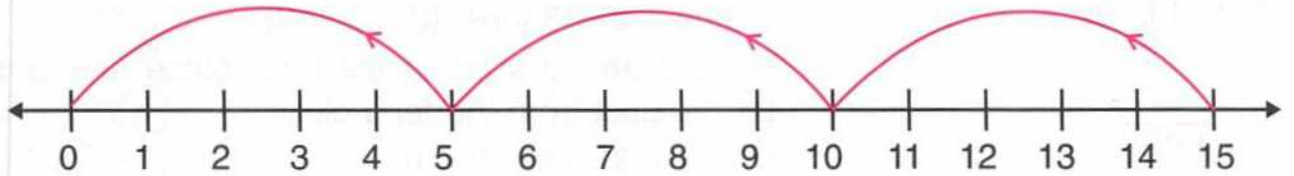
5. Divide 20 by 4 using a number line.
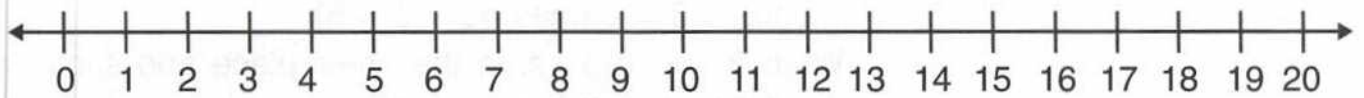
Fill in the blanks.

Example : $12 \div 6 = \boxed{2}$

$\boxed{2} \times 6 = 12$

1. $16 \div 2 = \bigcirc$

 $8 \times 2 = \bigcirc$

2. $24 \div 3 = \bigcirc$

 $8 \times 3 = \bigcirc$

3. $40 \div 5 = \bigcirc$

 $8 \times 5 = \bigcirc$

4. $36 \div 4 = \bigcirc$

 $9 \times 4 = \bigcirc$

5. $40 \div 4 = \bigcirc$

 $10 \times 4 = \bigcirc$

6. $24 \div 6 = \bigcirc$

 $\bigcirc \times 6 = 24$

7. $35 \div 5 = \bigcirc$

 $\bigcirc \times 5 = 35$

8. $36 \div 6 = \bigcirc$

 $\bigcirc \times 6 = 36$

9. $56 \div 8 = \bigcirc$

 $\bigcirc \times 8 = 56$

10. $33 \div 3 = \bigcirc$

 $\bigcirc \times 3 = 33$

Long Division Method

Example 1

Divide 96 by 3.

```
      32
  3 ) 96 (
     -9
      ──
       6
     - 6
      ──
       0
```

Method :

Step 1 : Start with the extreme left digit. Divide the tens by 3.
9 tens ÷ 3 = 3 tens. (3 × 3 = 9)
Write 3 above 9 *i.e.* in the tens' place and subtract the product from the tens digit.
9 − (3 × 3) = 9 − 9 = 0

Step 2 : Write the difference and copy the ones digit 6 below ones' place.

Step 3 : Divide the ones by 3.
6 ones ÷ 3 = 2 ones. (3 × 2 = 6)
Write 2 above 6 *i.e.* in the ones' place and subtract the product from the ones digit.
6 − (3 × 2) = 6 − 6 = 0

Ans. 32

Many a times, we find that a number is not completely divsible. Let us study one such example.

Example 2

Divide 89 by 4.

```
      22
  4 ) 89 (
     -8
      ──
       9
     - 8
      ──
       1  ←── Remainder
```

Remainder indicates that the dividend is not completely divisible by the divisor.

Method :

Step 1 : Divide the tens by 4.
4 × 2 = 8, *i.e.* 8 tens ÷ 4 = 2 tens
Write 2 above 8 *i.e.* in the tens' place and subtract the product from the tens digit.
8 − (4 × 2) = 8 − 8 = 0

Step 2 : Write the difference and copy the ones digit below ones' place.

Step 3 : Divide the ones by 4.
Now, 4 × 2 = 8 and 4 × 3 = 12
Since, 12 > 9, we take 4 × 2 = 8
9 ones ÷ 4 = 2 ones
Write 2 above 9 *i.e.* in the ones' place and subtract the product from the ones digit.
9 − (4 × 2) = 9 − 8 = 1
Here, 1 is called the **remainder**.

Ans. 22

Exercise

A. Divide the following.

1. $60 \div 6$

2. $40 \div 4$

3. $84 \div 4$

4. $96 \div 8$

5. $69 \div 3$

6. $85 \div 5$

7. $80 \div 2$

8. $56 \div 7$

9. $54 \div 9$

10. $78 \div 3$

11. $70 \div 5$

12. $48 \div 6$

B. Divide the following in your notebook using long division method.

1. $99 \div 9$

2. $48 \div 4$

3. $90 \div 3$

4. $96 \div 6$

5. $84 \div 4$

6. $68 \div 2$

7. $90 \div 5$

8. $72 \div 6$

9. $96 \div 8$

10. $84 \div 7$

11. $88 \div 5$

12. $91 \div 5$

13. $91 \div 3$

14. $67 \div 4$

15. $99 \div 6$

16. $81 \div 7$

Word Problems

Example 1 36 biscuits are to be distributed equally among 9 children. How many biscuits will each child get ?

Solution :

Number of biscuits = 36

Number of children = 9

∴   Each child will get 36 ÷ 9 = 4

Ans. Each child gets 4 biscuits

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

Example 2 74 pencils are to be packed equally in 9 packets. How many pencils will be packed in the boxes ? How many pencils are left over ?

Solution :

Number of pencils = 74

Number of packets = 9

Number of pencils in each box = 74 ÷ 9 = 8

Number of pencils left out = 2

$$
\begin{array}{r}
8 \\
9\overline{)74(} \\
-72 \\
\hline
2 \\
\end{array}
$$

Ans. Each packet will contain 8 pencils and 2 pencils are left out.

Exercise

A.   Solve the following division word problems in your notebook.

1.   Divide 48 sweets equally among 6 children.

2.   Anu reads 88 pages of a book in 8 days. How many pages did she read in a day ?

3.   There are 48 bicycles in 4 rows. How many bicycles are there in each row ?

4.   There are 7 days in a week. How many weeks are there in 91 days ?

5.   There are 98 chairs to be arranged in 8 rows. How many rows are there ? How many chairs are left ?

6.   There are 81 students. Teams of 6 students are to be formed from among them. How many such teams can be formed ? How many students will be left out ?

7.   A sweet shop has made 97 sweets. They have to be packed in 9 boxes. How many sweets will be packed in each box? How many sweets will be left ?

8.   A book shop sold 81 books in 9 days. How many books did it sell each day ?

B. Mixed practice (Addition, Subtraction, Multiplication and Division) Solve in your notebook.

1. A book has 72 pages. There are 9 such books on a shelf. How many pages are there in all?

2. There were 565 pieces of chalk in a box. 388 pieces were used in one month. How many pieces of chalk were left?

3. An aeroplane carried 130 passengers on the first day, 453 on the second day and 255 on the third day. How many passengers travelled by the plane on all three days?

4. There are 8 cupboards in a library. Each cupboard contains 95 books. Find the number of books in the library?

5. Mary had 96 sweets. She gave six sweets to each of her friends. To how many friends did she give the sweets?

6. In a box, there are 150 blue pencils and 350 red pencils. How many pencils are there in the box?

7. There were 583 mango trees on the farm but 286 trees fell down due to heavy rain. How many trees were left?

8. A basket contains 125 apples. How many apples are there in 7 such baskets?

9. There are 88 biscuits in a tin. They have to be packed in 8 packets. How many biscuits will each packet contain?

10. A T.V. company made 129, 248 and 428 T.V. sets in three different months. How many T.V. sets were made altogether?

11. There are 99 children taking part in a drill display. They are arranged in 9 groups. How many students are there in each group?

12. How many tickets were sold in a week, if 96 tickets were sold every day?

13. The sum of two numbers is 743. If one number is 328, find the other number.

14. One bundle contains 121 note books. How many note books are there in 7 such bundles?

8 Geometry
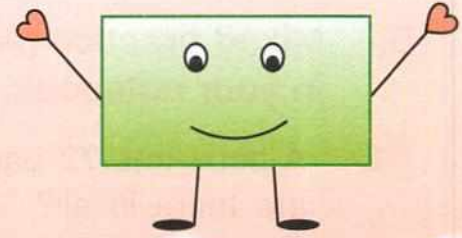
A flat surface which extends in all directions is called a **plane**. Figures that lie completely in a plane are said to be two dimensional or 2-D figures because they only have length and width.

e.g. square, rectangle, triangle, circle, etc.

2-D shapes only have a flat face or surface and have area. They have both sides and vertices, except for a circle. Face of a 2-D figure is its surface that we can see. Its vertex is the point at which its two sides meet.

Let Us Revise.

2-D Shapes
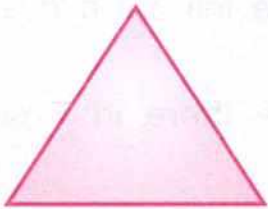
T _ _ A _ G _ E

It has 3 equal or unequal sides and 3 vertices.
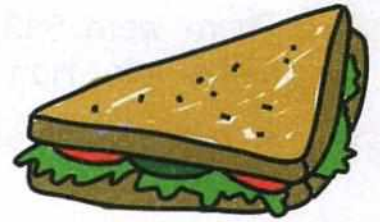
Sandwich

S _ U _ _ E

It has 4 sides and 4 vertices. All its sides are equal. It has 2 equal diagonals.
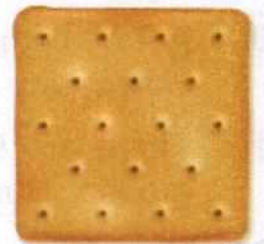
Biscuit

R_ C _ A _ _ L _

It has 4 sides (2 long and 2 short) and 4 vertices. Its opposite sides are equal. It has 2 equal diagonals.

Envelope
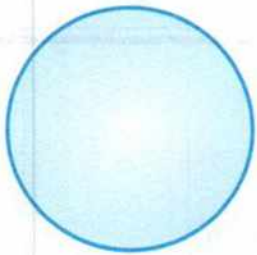
It has neither sides
nor vertices.
It is round in shape.

Button

C __ R __ L __

Some More 2-D Shapes
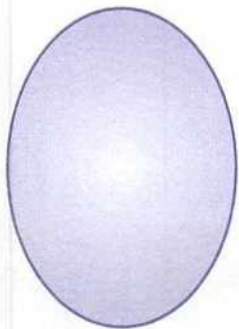
It has neither sides
nor vertices.
It is more elongated
than a circle.

Baseball

OVAL
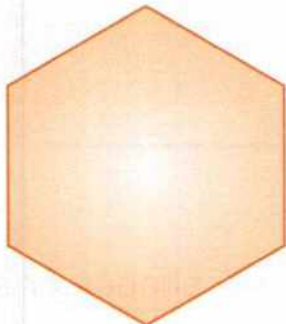
It has 6 sides which may
or may not be equal.
It has 6 vertices.

Beehive

HEXAGON

It has 4 equal sides
and 4 vertices.
It has 2 unequal diagonals.
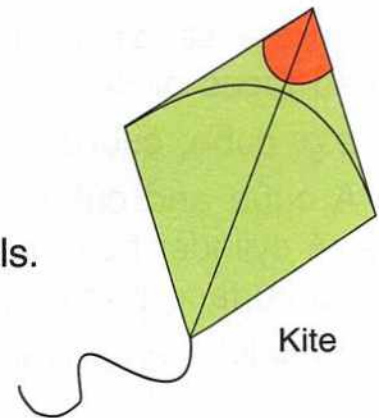
Kite

RHOMBUS

Exercise

Answer the following questions :

1. Which shape has 3 vertices ?

2. Which shape has all 4 sides equal ?

3. Which shape has its opposite sides equal ?

4. How many sides does a hexagon have ?

5. Which shape has unequal diagonals ?

6. How many vertices does a rhombus have ?

7. Name two shapes having no sides.

8. Name two shapes having equal diagonals.
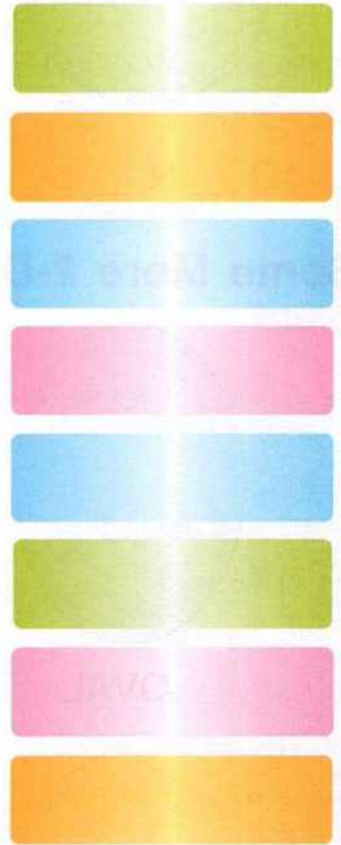
3-D Shapes

Shapes that have length, width and height are called 3-D shapes or solids.

3-D shapes do not lie in a single plane. While 2-D shapes have only length and width, 3-D shapes are three dimensional as they have length, width and also thickness (or height). They occupy space and can either have flat faces, curved faces or both.

e.g. cube, cuboid, cylinder, sphere and cone.

A cube and cuboid have flat surfaces while a sphere has only a curved face. A cylinder has one curved surface and two flat surfaces. A cone has one curved surface and one flat surface.

All solids have faces, but edges and vertices may or may not be present.

Face : The surface of an object which we can see is called a face. It can either be flat or curved.

Face

Face

Face

Flat face

Curved face

Flat face

Curved face
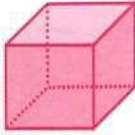
Flat face
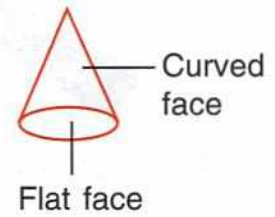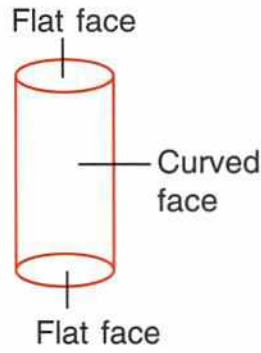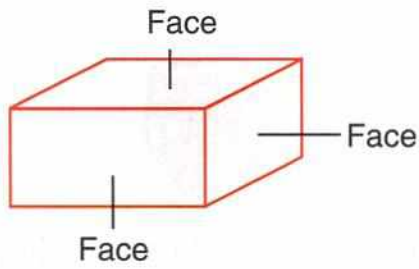
Edge : An edge is a side where two faces meet.

Edge

E

E

E

E

Edge

E

Edge

No edge
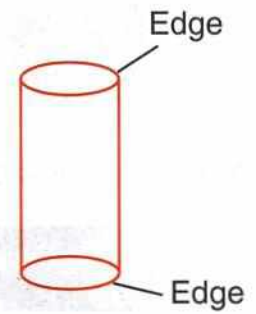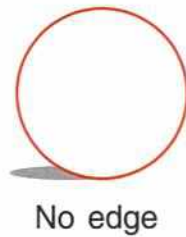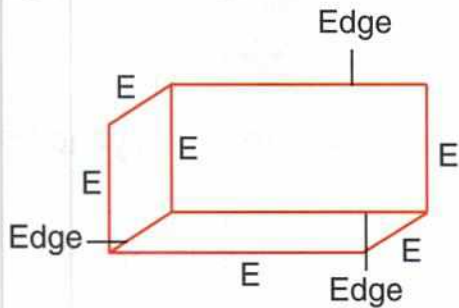
Edge

Edge

Vertex : A vertex is a point where two or more edges meet. Its plural is vertices.

V

V

V

V

V

Vertices

Vertex

No vertex
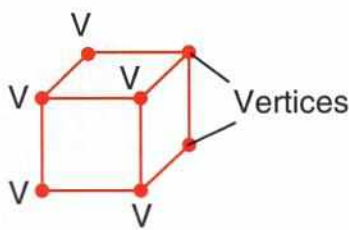
Shapes	Cube	Cuboid	Sphere	Cylinder	Cone
Vertices	8	8	0	0	1
Edges	12	12	0	2	1
Flat faces	6	6	0	2	1
Curved faces	0	0	1	1	1

Exercise

A. Circle the correct shape of the following objects.

1.

Sphere   Cuboid   Rectangle

2.

Cube   Cuboid   Square

3.

Sphere   Circle   Cylinder

4.

Triangle   Cone   Cylinder

5. BATTERY

Cylinder   Cone   Rectangle

B. Circle the object having :

1. A curved surface.
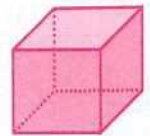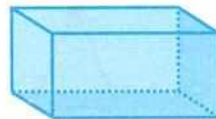
2. 12 edges and 8 vertices.
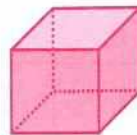
3. 1 vertex.
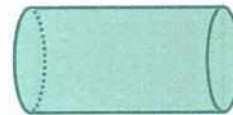
4. Only flat faces.

5. No vertex.

80

Let Us Look at Some Objects Around Us

This flower vase has a curved face.

Similarly, a balloon also has a curved face.

This shoe box is made up of only flat faces and no curved faces.

Which face do you think a ruler has — curved or flat ?

Think and write some objects that have —
(a) Flat faces only (b) Curved faces only (c) Both flat and curved faces ?

Straight Lines and Curved Lines

Straight lines

If we hold a string tightly between our hands, we get a straight line.
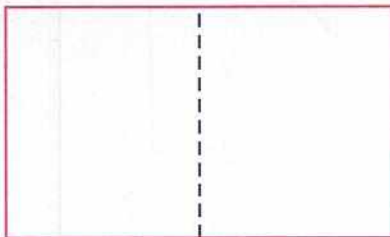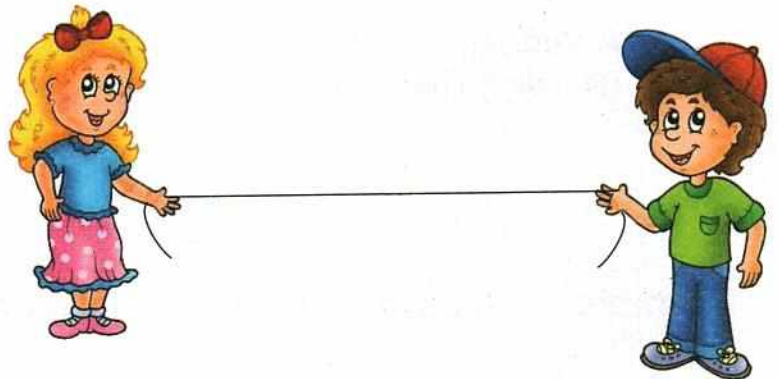
Also when we fold a paper and press it to get a crease, we get a straight line.

Curved lines

When we hold a string loosely between our hands, we get a curved line.
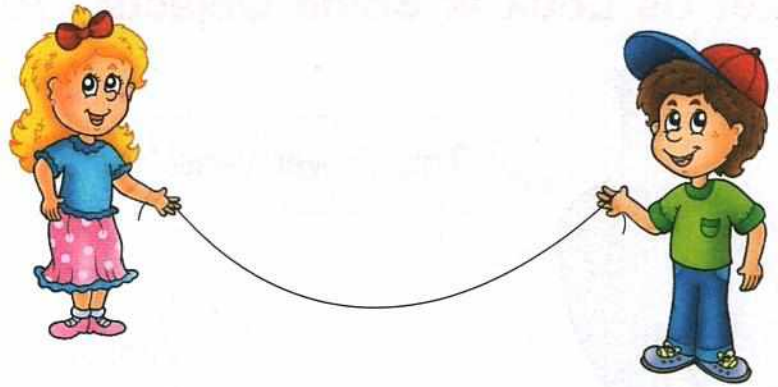
Drawing lines

We can draw straight lines using a ruler or any straight edge, like the edge of a notebook, pencil box, etc.
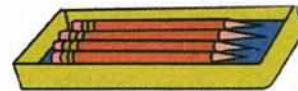
Ruler   Book   Pencil box

We can also draw :

A horizontal line

A Vertical line
(standing line)

A slanting line

Example   Observe the picture given alongside.

It has **6** slanting lines, **1** vertical line,
1 horizontal line and **1** curved line.
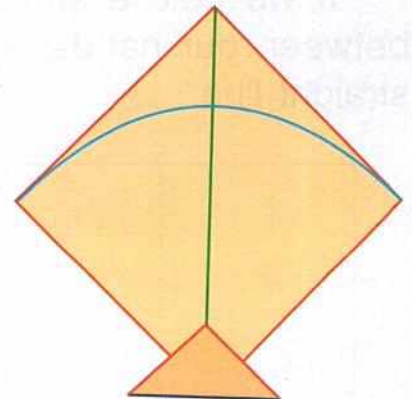
Exercise

A. Look at the figure and write the number of :

1. Horizontal lines ☐

2. Vertical lines ☐

3. Slanting lines ☐

4. Curved lines ☐
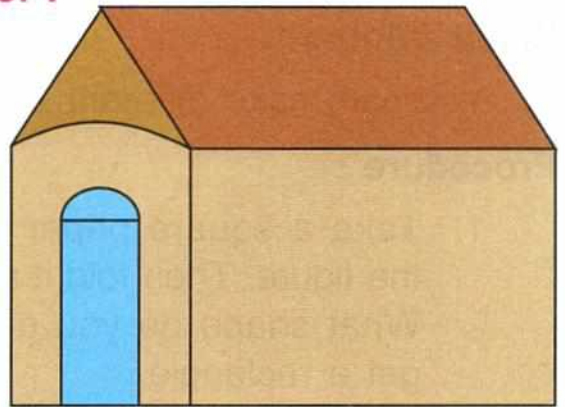
B. Consider the dot grid given below :
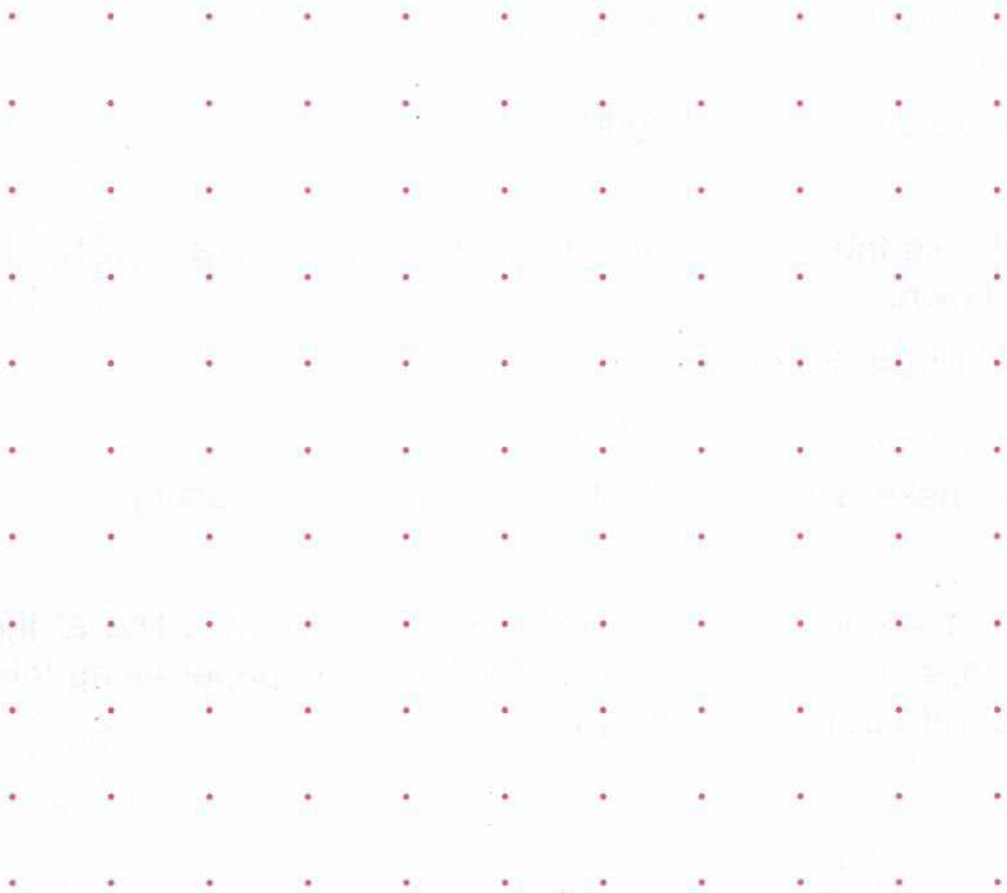
Draw the following lines on the dot grid using your scale.

1. Two vertical lines.
2. Two horizontal lines.
3. Two slanting lines.
4. Two curved lines.

2-D Shapes

Making 2-D shapes by paper folding and paper cutting.

Paper folding :

You can make different 2-D shapes by paper folding.

Procedure :

1. Take a square paper as shown in the figure. Then fold it at the middle. What shape do you get ? You will get a rectangle.
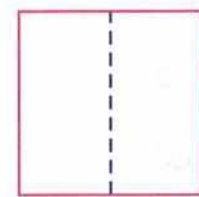
Square paper   A rectangle

2. Now, fold the rectangle again at the middle as shown.

   You will get a square again.

3. Next, fold the square through its opposite corners as shown.

   You will get a triangle.
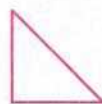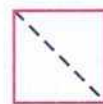
2-D shapes through paper cutting*

You can make different 2-D shapes using paper cutting.

Procedure :

1. Take a square paper of reasonable size. Draw a line at the centre of the paper using a scale and pencil. Cut the paper along this line using a pair of scissors as shown.
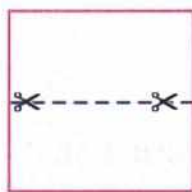
Square paper   Two equal rectangles

*Note : To be done under the supervision of teacher/parents.

2. Take one of the rectangles. Draw a vertical line at the centre of the rectangle. Cut the rectangle along this line to get 2 equal squares.

Rectangular paper   Two equal squares
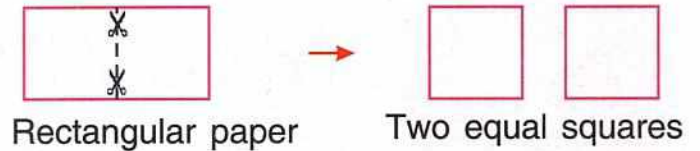
3. Take a square and draw a line joining its opposite corners and cut it along the line as shown in the figure. You will get two equal triangles.

Square paper   Two equal triangles
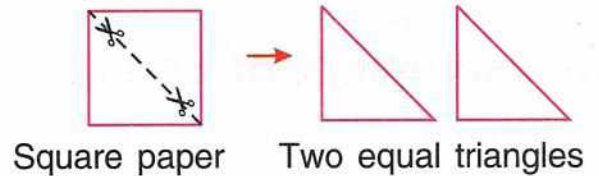
4. Take a sheet of square paper. Put a circular object like a bangle on it and trace its outline on the paper using a pencil. Now remove the object and cut the paper along the line. You will obtain a circle.

Square paper   Circle
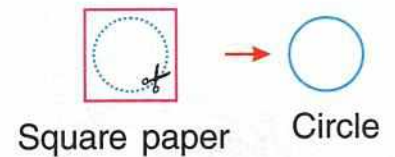
Similarly, you can obtain different shapes from a square paper by tracing and cutting

Exercise

1. From a rectangular paper, cut 2 equal rectangles using the paper folding method.

2. From a circular paper, obtain a square by tracing and cutting.

9 Measurement

Measurement of Length (Using Non-standard Units)

Length gives us an idea about how long or short an object is. The length of various objects such as a desk, table, bed, room, etc. can be measured by using different parts of our body such as hand span, arm span, palm, cubit, foot and pace (step).
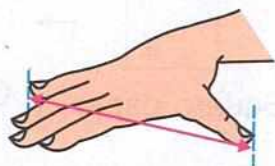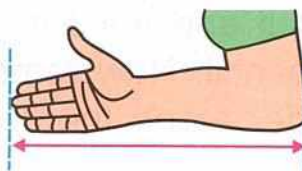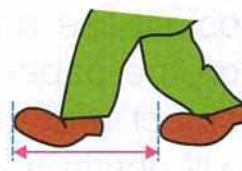
a hand span	a cubit	step

The body parts are non-standard units of length because the size of body parts vary from person to person. So if the same object is measured by different persons using their body parts, we may get different measurements of the same object.
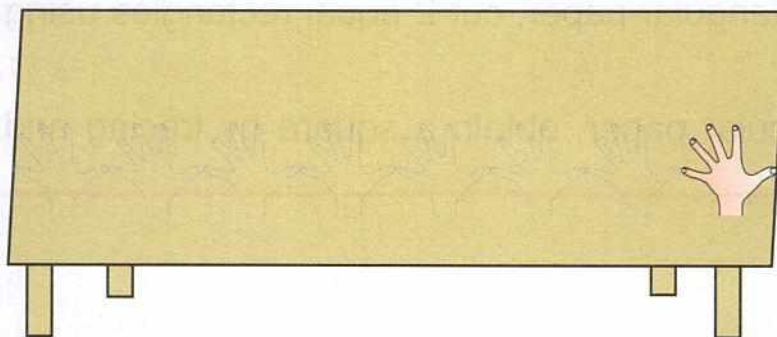
Measuring the length and breadth of a table by the hand span

Measurement of Length (Using Arbitrary Units)

Length of an object may be measured by some other smaller objects such as paper clips, match sticks, pencils, crayons, etc. Such objects which are used to measure the length of other objects are called **arbitrary units**.

Measuring the length of a baseball bat using a pencil

If two persons use the same unit to measure the length of a same object, then they will get same results. But if they use two different objects with different lengths to measure the same object, then they will get different results.
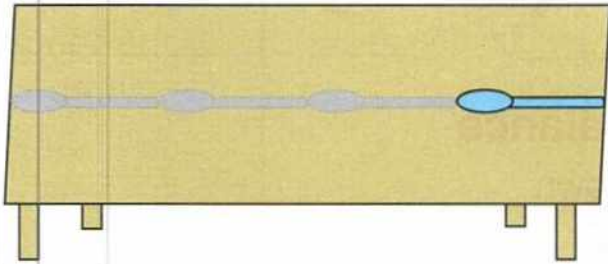
Length of this table is equal to 4 serving spoons.

Length of this pencil is equal to 8 paper clips.

Exercise

Fill in the blanks after measuring the objects using given arbitrary units.

1. Your pencil is _____ erasers long.

2. The teacher's table is _____ pencils long.

3. The black board is _____ dusters long.

4. Your desk is _____ crayons long.

5. Your mathematics book is _____ erasers long.

6. The teacher's table is _____ pencils long.

7. Your desk is _____ crayons long.

8. Your mathematics book is _____ match sticks long.

9. Your tiffin box is _____ paper clips long.

10. Your room is _____ pencils long.

Measurement of Weight

Weight gives us an idea of whether an object is heavy or light.

In the given groups, circle the lighter object.
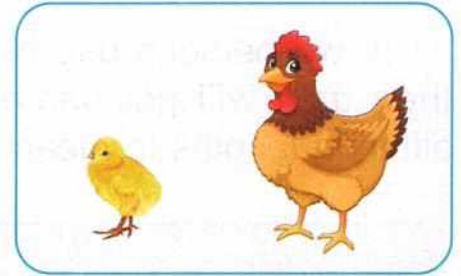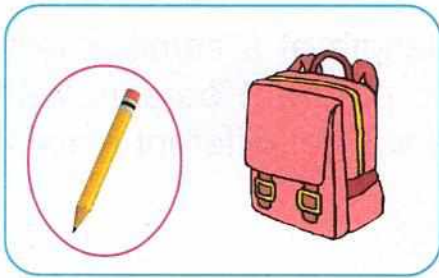
Measurement of Weight Using a Balance

- The pan having more weight moves down
- The pan having less weight moves up.
- The pans remain at the same level if the weights on both the pans are equal.
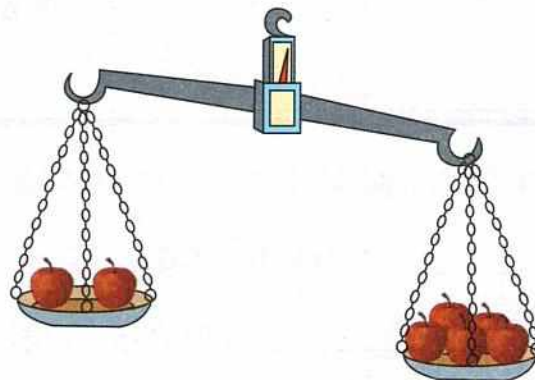
Exercise

A. Tick (√) the heavier object.

1.
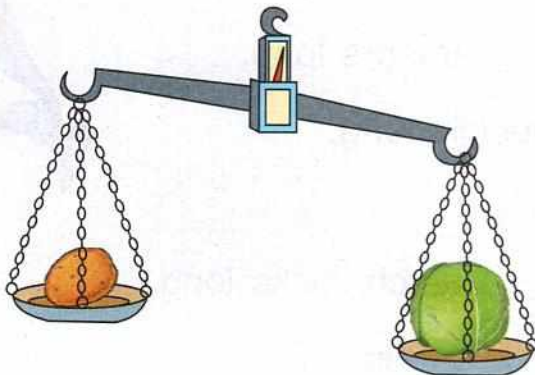
2.
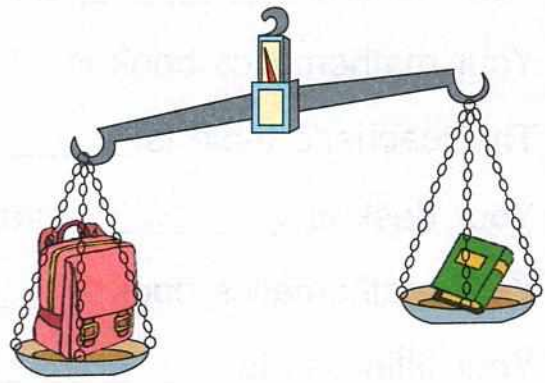
3.
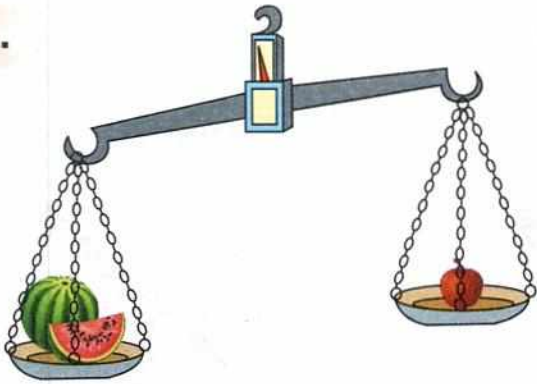
4.
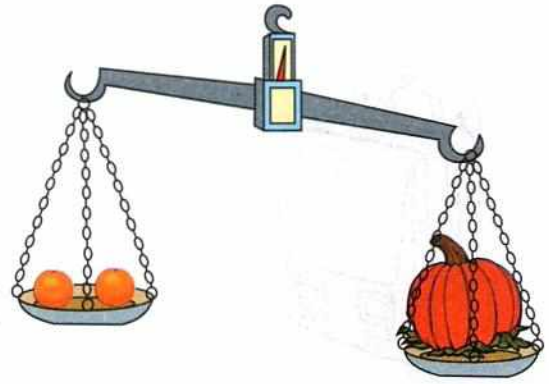
5.
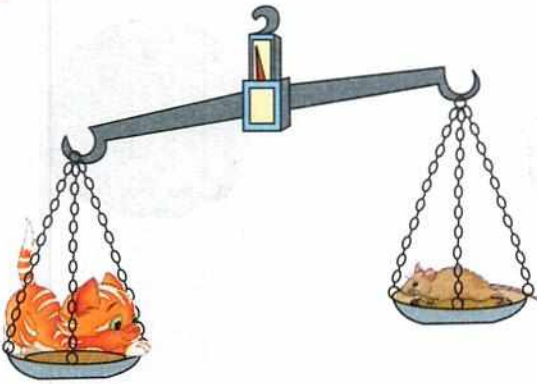
6.
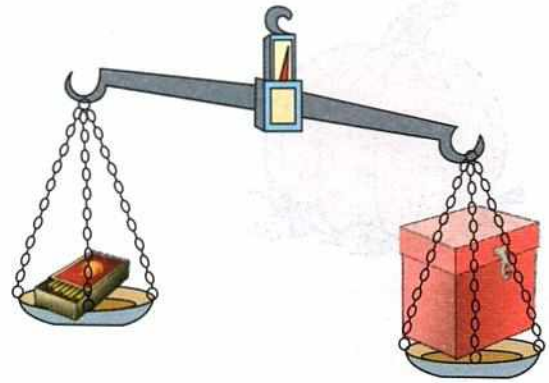
7.
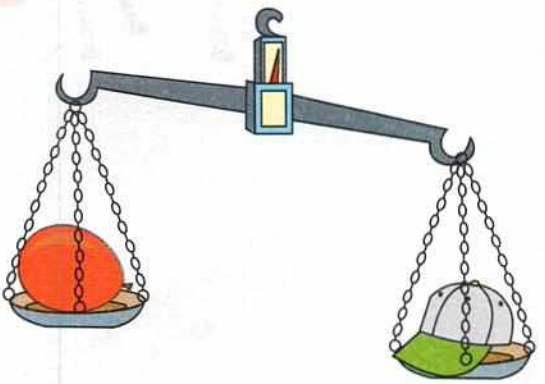
8.
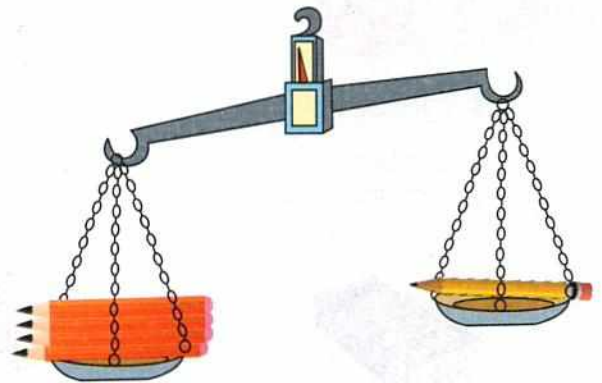
B. Tick (√) the heaviest and cross the lightest in each goup.

1.

2.

3.

4.
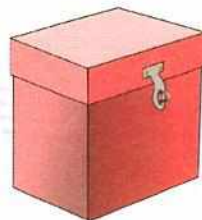
Measurement of capacity

The capacity of a container is the quantity of a substance that the container can hold.

Take a bucket and fill it using smaller containers like a jug or a mug.

We see that 5 jugs of water are required to completely fill the bucket. So, we say that the capacity of the bucket is equal to that of 5 jugs. Similarly, the capacity of the bucket is equal to that of 25 mugs.
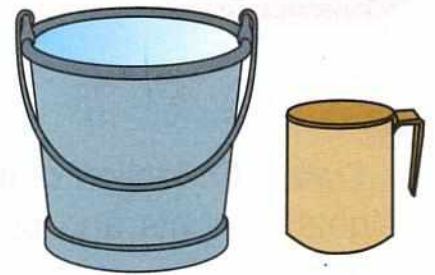
In the same manner, we can fill the jug using a glass or a cup or a bowl. We find that :

- Capacity of the jug is equal to that of 6 glasses.
- Capacity of the jug is equal to that of 10 cups.
- Capacity of the jug is equal to that of 8 bowls.

Exercise

Tick (√) the container whose capacity is maximum in each group.

1.

2.

3.
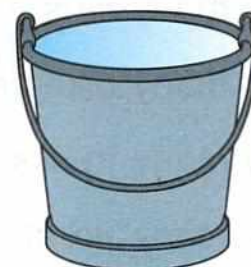
10 Data Handling

Data : Collection of **information in the form of numerals** is called **data**. The heights, weights and birthdays of all your classmates are examples of data.

Other examples of data are number of students in the different sections of class 2, number of students in each section of the school, population of cities, etc.

Pictograph : When we show a data with the help of pictures, it is called a **pictograph**.

Example Consider the number of vehicles a transport agency has. If it has 8 cars, 6 bikes, 3 trucks and 5 rickshaws, we can represent this information as follows : Observe the given pictograph and the answers of the following questions.

Car	
Bike	
Truck	
Rickshaw	

1. How many cars are there ?   8

2. How many bikes are there ?   6

3. How many trucks are there ?   3

4. How many rickshaws are there ?   5

5.	Which vehicle is the least in number ?	Truck
6.	Which vehicle is the maximum in number ?	Car
7.	What is the total number of vehicles ?	22

Exercise

A. Observe the given pictograph of fruits and answer the questions that follow.

Orange	🍊🍊🍊🍊🍊🍊🍊🍊🍊
Banana	🍌🍌🍌🍌
Papaya	🫒🫒🫒🫒🫒
Apple	🍎🍎🍎🍎🍎🍎
Mango	🥭🥭🥭🥭🥭🥭🥭🥭
Pear	🍐🍐🍐

1.	How many oranges are there ?	_____
2.	How many papayas are there ?	_____
3.	How many bananas are there ?	_____
4.	How many apples are there ?	_____
5.	How many mangoes are there ?	_____
6.	How many pears are there ?	_____
7.	Which fruit is the least in number ?	_____
8.	Which fruit is the maximum in number ?	_____
9.	What is the total number of fruits ?	_____
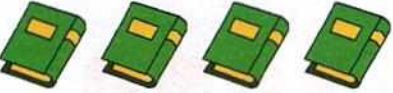
B. Observe the given pictograph and answer the questions that follow.

Pencil	
Eraser	
Sharpener	
Book	

1. How many pencils are there ? _____

2. How many books are there ? _____

3. How many sharpeners are there ? _____

4. How many erasers are there ? _____

5. Which article is the least in number ? _____

6. Which article is the maximum in number ? _____

7. What is the total number of articles ? _____

C. Observe the given pictograph and answer the questions that follow.

Cat	
Rat	
Dog	
Elephant	
Lion	

1. How many elephants are there ? _____

2. How many lions are there ? _____

3. What is the total number of cats and dogs ? _____

4. Which animal is the least in number ? _____

5. Which animal is the maximum in number ? _____

Drawing a Pictograph

Example   In a zoo, there are 6 tigers, 5 rabbits, 3 deers and 8 monkeys. We can draw a pictograph as shown below.

We draw the picture of each item according to its number as follows.

Tigers	
Deers	
Rabbits	
Monkeys	

Exercise

A. On a table, there are 4 pencils, 2 erasers, 5 books and 1 sharpener. Show this information through a pictograph.

Pencil	
Eraser	
Book	
Sharpener	

Example   Vikram saw some fruits in a fruit basket. He made a chart.

Fruits	Mango	Banana	Apple	Water melon	Guava
Number	8	6	4	1	5

By using the above chart,you can answer the following questions easily.

1. How many apples are there ?   4
2. How many oranges are there ?   0
3. Which fruit is the maximum in number ?   Mango
4. How many bananas are there ?   6
5. How many fruits are there altogether ?   24

Exercise

A. Read the given chart and answer the following questions :

Favourite subject	English	Mathematics	Music
Number of students	12	28	15

1. How many students like Music ?   _____
2. How many students like English ?   _____
3. How many students like Mathematics ?   _____
4. Which subject is liked by most of the students ?   _____

B. One day a doctor took the weights of his 6 patients and made the following chart to keep the record. Read the chart and answer the following questions.

Name	Weight
Shreya	46 kg
Naveen	52 kg
Seema	39 kg
Pankaj	48 kg
Aditi	41 kg
John	48 kg

1. Whose weight is the minimum ? _____
2. Whose weight is the maximum ? _____
3. Which two patients weigh the same ? _____
4. Who weighs 41 kg ? _____
5. What is the weight of Shreya ? _____

C. There are 80 people in an office. The following chart shows the means of transport used by them to reach the office. Observe the chart carefully and answer the following questions.

Means of transport	Number of workers
Scooter	12
Bike	28
Car	16
Bus	24

1. How many people reach the office by bus ? _____
2. Which vehicle is used by the maximum number of people ? _____
3. Which vehicle is used by the minimum number of people ? _____
4. How many people reach the office by car ? _____

11 Pattern

Arrangement of numbers, alphabets, geometrical figures or objects in an order is called a **pattern**. We observe patterns around us — in nature, in materials and in art and architecture. Repeated patterns add beauty to objects.

Observe the following :

(a)

After every rickshaw, there is a truck. So next in the order should be a rickshaw.

(b)

First one is an apple followed by a banana. So next in the order is going to be an apple.

(c) 2, 4, 6, 8, 10, ...

Given is the multiplication table of 2. So the next number is going to be 12.

(d) 3, 7, 11, 15, 19, 23, ...

If 4 is added to the previous number, we get the next number. So the number after 23 is 23 + 4 = 27.

Exercise

A. Complete the patterns.

1. _____

2. _____

3. △ ▽ △ ▽ △ △ △ _____

4. ○ □ △ ○ □ △ ○ _____

5. 🍎 🍊 🍎 🍊 🍎 _____

6. 🍦 🍬 🍦 🍬 🍦 🍬 🍦 _____

7. AE   AAE   AAAE _____

8. MLO   MLO   MLO _____

9. AT1   AT2   AT3   AT4 _____

10. A12   B34   C56 _____

B. Complete the number patterns.

1. 3, 6, 9, 12, 15,   _____, _____, _____

2. 5, 10, 15, 20, 25,   _____, _____, _____

3. 1, 3, 5, 7, 9, 11,   _____, _____, _____

4. 4, 8, 12, 16, 20,   _____, _____, _____

5. 7, 9, 11, 13, 15,   _____, _____, _____

6. 25, 35, 45, 55, 65,   _____, _____, _____

7. 10, 20, 30, 40, 50,   _____, _____, _____

8. 100, 200, 300, 400,   _____, _____, _____

9. 50, 100, 150, 200,   _____, _____, _____

10. 250, 350, 450, 550,   _____, _____, _____

12 Money

Revision

Money is used to buy something or to pay someone for something. Money is in the form of coins and notes. Coins are made of metals and notes are printed on paper. In India, currency is in rupees and paise.

₹ 1, ₹ 2, ₹ 5 and ₹ 10 come in coins as well as in notes.

₹ 1 = 100 p

Coins or Metal Currency

Notes or Paper Currency

Example 1 : Write ₹ 300 in words.

₹ 300 = Three Hundred Rupees

Rupees are to the left of the point (.) and paise on the right.

Example 2 : Write ₹ 100.50 in words.

₹ 100.50 = One Hundred Rupees and Fifty Paise

Exercise

A. Write in words.

Nowadays, coins below 50 p are not in use.

₹ 6.50 = **Six rupees and fifty paise**

₹ 8.50 = ...

₹ 11.50 = ...

₹ 700.50 = ...

₹ 105 = ...

₹ 257.50 = ...

₹ 389 = ...

₹ 420.50 = ...

B. Write in numbers.

Five rupees and fifty paise = **₹ 5.50**

Ninety rupees and fifty paise = ₹..............

Five hundred ten rupees and fifty paise = ₹..............

Three thousand and fifty eight rupees = ₹..............

One hundred and eleven rupees = ₹..............

Twenty-two rupees and fifty paise = ₹..............

Three hundred rupees and fifty paise = ₹..............

Four hundred and twelve rupees = ₹..............

Evaluate the Total Amount

Examples : (a)

50p + 50p = ₹ 1

(b)

₹ 100 + ₹ 50 + ₹ 20 = ₹ 170

(c)

₹ 500 + ₹ 10 + 50 p = ₹ 510.50

Exercise

(A) Look at the following notes and coins. Write the total amount in each case.

1. + + ₹..............

2. + + ₹..............

3. + + ₹..............

4. + ₹..............

5. + + ₹..............

6. + +   ₹................

7. + + +   ₹................

(B) Find the total amount in each purchase as per given rates.

🍦	₹ 8	🍇	₹ 25	⚽	₹ 140
🪀	₹ 7.50 p	🍎	₹ 1	🎂	₹ 10
🧸	₹ 35	✏️	₹ 2.50 p	🖊️	₹ 14
📕	₹ 4	🎈	50 p	🨠	₹ 2.50 p

1.

	₹	p
Ball	140	00
Grapes	25	00
Balloon		50
Total ₹	**165**	**50p**

2.

	₹	p
Whistle		
Cake		
Pen		
Total ₹		

3.

	₹	p
Cake		
Ice-cream		
Pen		
Total ₹		

4.

	₹	p
Ice-cream		
Pencil		
Book		
Total ₹		

5.

	₹	p
Whistle		
Ball		
Apple		
Total ₹		

6.

	₹	p
Top		
Pen		
Teddy		
Total ₹		

	₹	p			₹	p			₹	p
7. Grapes			**8.** Teddy			**9.** Balloon		
Pencil			Whistle			Top		
Ball			Apple			Cake		
Total ₹			**Total ₹**			**Total ₹**		

Addition of money

> Add the Paise first.

Example 1 :   Add ₹ 35.50 and ₹ 24.00.

₹	p
35	50
+ 24	00
59	**50**

METHOD :

Step 1 : Add the paise. 50 + 0 = 50 p.
Write 50 under the paise column.

Step 2 : Add the rupees. 35 + 24 = ₹ 59.
Write 59 under the rupees column.

Ans. ₹ 59.50

> Remember :
> 50p + 50p = ₹ 1

Example 2 :   Add ₹ 138.50, ₹ 56.50 and ₹ 8.50.

₹	p
1 2 1	
138	50
56	50
+ 8	50
203	**50**

METHOD :

Step 1 : Add the paise. 50 + 50 + 50 = 150 p.
(100 p = ₹ 1)
150 p = 100 p + 50 p = ₹ 1 + 50 p.
Write 50 under the paise column and
carry over ₹ 1 to rupees column.

Step 2 : Add the rupees.
138 + 56 + 8 + 1 (carry over) = ₹ 203.
Write 203 under the rupees column.

Ans. ₹ 203.50

Exercise

A. Add the following.

₹	p
36	00
+ 42	50
78	**50**

₹	p
28	00
+ 31	50

₹	p
420	50
+ 42	50

₹	p
570	50
+ 22	00

₹	p
410	00
+ 38	00

₹	p
680	00
72	50
+ 83	00

₹	p
61	50
83	50
+ 82	50

₹	p
71	00
86	50
+ 90	00

₹	p
80	00
93	00
+ 50	50

₹	p
89	50
78	50
+ 56	50

₹	p
112	00
183	00
+208	00

₹	p
206	00
308	00
+380	00

₹	p
414	50
444	50
+109	50

₹	p
463	50
314	50
+ 116	50

₹	p
316	50
483	50
+517	00

B. Add (in your note book).

Answer

1. ₹ 243.50 + ₹ 384.00 + ₹ 178.50 ....

2. ₹ 355.50 + ₹ 286.00 + ₹ 89.00 ....

3. ₹ 70.50 + ₹ 189.00 + ₹ 346.50 ....

4. ₹ 214.00 + ₹ 367.00 + ₹ 345.50 ....

5. ₹ 466.00 + ₹ 201.50 + ₹ 141.50 ....

Subtraction of money

Example 1 :

	₹	p
	25	50
−	5	00
	20	**50**

METHOD :

Step 1 : Subtract the paise first.
50 − 0 = 50 p . Write 50 under the paise column.

Step 2 : Subtract the rupees.
25 − 5 = ₹ 20. Write 20 under the rupees column.

Ans. ₹ 20.50

Example 2 :

	₹	p
	85	100
	8̶6̶	00
−	74	50
	11	**50**

METHOD :

Step 1 : Start with the paise. We cannot subtract 50 from 0 as 50 > 0. So borrow ₹ 1 from 86 rupees.
Since ₹ 1 = 100 p, thus 100 p + 0 p = 100 p.

Step 2 : Subtract 50 p from 100 p. 100 − 50 = 50 p.
Write 50 under the paise column.

Step 3 : Subtract the rupees. ₹ 86 become ₹ 85
(After borrowing one rupee from it) 85 − 74 = ₹ 11.
Write 11 under the rupees column.

Ans. ₹ 11.50

Exercise

A. Subtract the following.

₹	p		₹	p		₹	p		₹	p		₹	p
9	00		14	50		29	50		88	00		96	00
− 5	00		− 9	00		− 17	00		− 69	50		− 77	50
4	**00**												

₹	p		₹	p		₹	p		₹	p		₹	p
189	50		218	00		401	50		635	00		714	50
− 123	50		− 189	50		− 292	50		− 483	00		− 336	00

₹	p		₹	p		₹	p		₹	p		₹	p
418	00		474	00		681	00		615	00		345	50
− 385	50		− 283	50		− 593	00		− 436	50		− 293	50

₹	p		₹	p		₹	p		₹	p		₹	p
316	00		718	00		436	00		987	50		871	50
− 183	50		− 539	50		− 248	50		− 598	00		− 598	50

Answer

B. (1) From ₹ 838.00 take away ₹ 47.50. ....

(2) From ₹ 375.50 take away ₹ 187.00. ....

(3) Take away ₹ 313.50 from ₹ 816.50. ....

(4) Take away ₹ 168.00 from ₹ 631.50. ....

(5) Take away ₹ 700.50 from ₹ 837.50. ....

Word problems

Example 1 : Tom bought a pencil box for ₹ 105.50, a pen for ₹ 28.50 and a pencil for ₹ 2.00. How much did he spend in all ?

Solution :

Cost of the pencil box   =   ₹ 105.50

Cost of the pen   =   ₹ 28.50

Cost of the pencil   =   ₹ 2.00

Total cost (by adding)   =   **₹ 136.00**

Example 2 : Mohan had ₹ 961.00. He bought a watch for ₹ 851.50. How much money does he have now ?
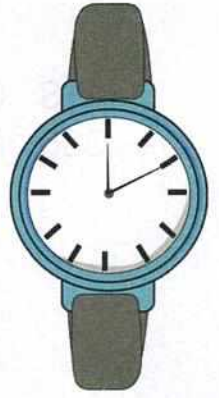
Solution :

Amount of money Mohan had = ₹ 961.00

Amount of money spent = ₹ 851.50

Amount of money left (by subtracting) = ₹ 961.00 – ₹ 851.50

= **₹ 109.50**

Exercise

Solve the following in your notebook.

1. Mohan had ₹ 45.50. His mother gave him ₹ 30.00. How much money does he have now ? _____

2. I bought a shirt for ₹ 567.00 and a pair of shoes for ₹ 400. How much money did I spend ? _____

3. Sunder had ₹ 445.50 in his piggy bank. He put ₹ 132.50 more into it. What amount is there in the piggy bank now ? _____

4. After spending ₹ 25.50, Suman had ₹ 35.50 left with her. How much money did she have at first ? _____

5. Your mom gives you ₹ 95.50. You spent ₹ 47.00 to buy books. How much money is left with you now ? _____

6. Amit wants to buy a shirt priced ₹ 750. He has saved ₹ 517.50 so far. How much more money does he need to buy the shirt ? _____

7. I bought a radio for ₹ 600.50, table fan for ₹ 214.50 and a tube light for ₹ 100.00. How much did I spend ? _____

8. After buying books and note books worth ₹ 265.50, I still have ₹ 155.00. How much money did I have at first? _____

9. I handed over a ₹ 50 note to the shopkeeper and bought bread and butter for ₹ 28.50. How much money was returned to me? _____

10. At a shop, Harsh shopped for ₹ 685. He gave an exact amount of currency to the shopkeeper. Which currency notes and coins he could use ? _____

13 Time

Revision

Days of the week

> There are 7 days in a week.

Monday	Tuesday	Wednesday	Thursday

Friday	Saturday	Sunday

Saturday and **Sunday** are known as the **weekend**. **Monday, Tuesday, Wednesday, Thursday** and **Friday** are known as the **weekdays**.

Monday is the first day of the week

Months of the year

1 January 31 days	2 Feburary 28 days	3 March 31 days	4 April 30 days	5 May 31 days
6 June 30 days	7 July 31 days	8 August 31 days	9 September 30 days	
10 October 31 days	11 November 30 days	12 December 31 days		
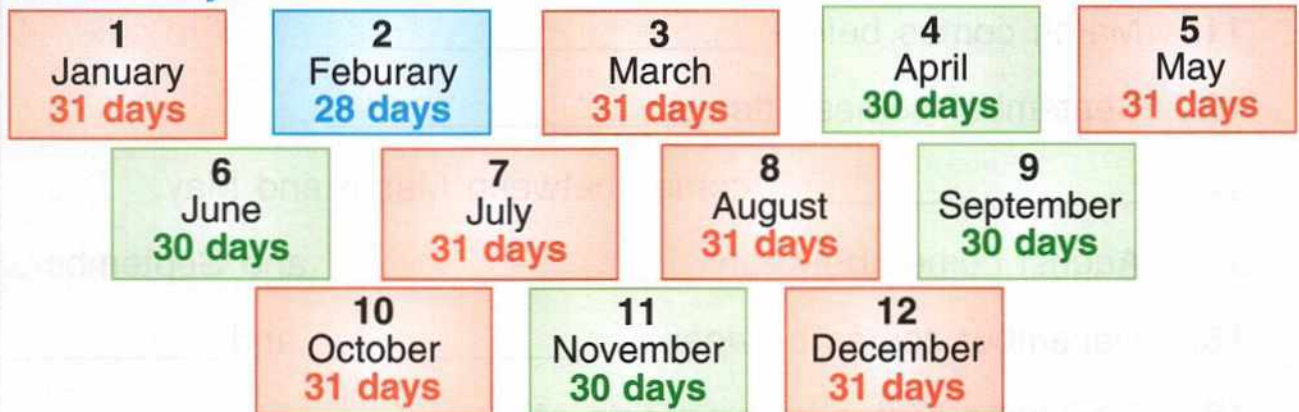
In a leap year, February has 29 days.

Before, between and after

> 12 months make a year.

- Tuesday comes **before** Wednesday.
- Tuesday comes **after** Monday.
- Tuesday comes **between** Monday and Wednesday.
- April comes **after** March.
- November comes **between** October and December.
- November comes **before** December.

Exercises

Fill in the blanks.

1. M __ N __ __ Y is the _____ day of the week.

2. The second day of the week is _____ .

3. The fourth day of the week is _____ .

4. There are _____ days in a week.

5. Saturday and Sunday are known as the _____ .

6. _____ comes after Sunday.

7. We do not go to school on _____ .

8. _____ comes before Saturday.

9. _____ comes between Friday and Sunday.

10. The first month of the year is J __N __ __ R __.

11. March comes before _____ .

12. September comes after _____ .

13. _____ comes between March and May.

14. August comes between _____ and September.

15. December comes between _____ and _____ .

16. Christmas comes in the month of _____ .

17. Republic Day is celebrated on _____th of _____ .

18. The year in which the month _____ has 29 days is called a _____ year.

Time and Clock

We use a watch, a clock or a time-piece to see the time. Look at the face of the clock. It has numbers from 1 to 12 and two hands. One hand is longer than the other. The longer hand is the **minute hand**. It indicates time in minutes. The shorter hand is the **hour hand**. It indicates time in hours.

Minute hand

Hour hand
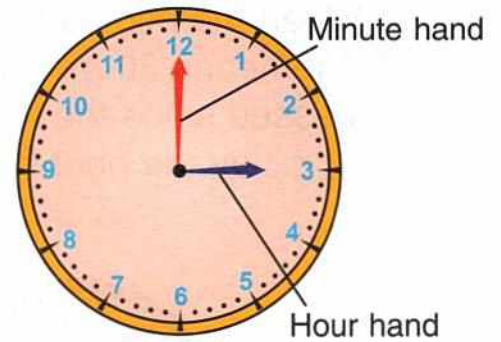
60 minutes make an hour. A day has 24 hours.

The time from midnight till noon (*i.e.* before noon) is known as **a.m.**

Example : We go to school at 7 o'clock in the morning. It is written as 7:00 a.m.

The time from noon till midnight (*i.e.* after noon) is known as **p.m.**

Example : We eat our dinner at 8 o'clock in the evening. It is written as 8:00 p.m.

Minute Hand

Look at the clock alongside. You will see five small divisions between any two numbers. Each division shows a minute.

From 12 to 1, there are 5 minutes. Similarly, from 1 to 2, there are 5 minutes and so on until number 12.

Thus, starting from 12 and coming back to 12, the minute hand in the clock moves 60 minutes. When the minute hand covers 60 minutes, it means that it has completed 1 hour.
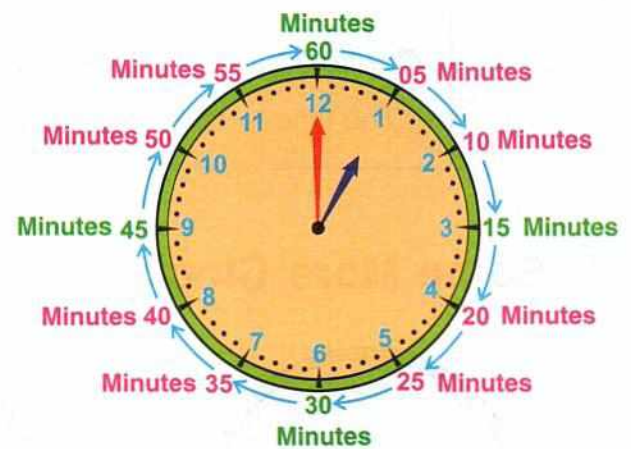
Time in 5 minute intervals

When the minute hand is at 3, it means 15 minutes have passed since the hour shown by the hour hand.

The minute hand is at 3.
The hour hand is at 12
The time is 12:15 or quarter past 12.

When the minute hand is at 6, it means 30 minutes have passed since the hour shown by the hour hand.

When the minute hand is at 9, it means 45 minutes have passed since the hour shown by the hour hand.
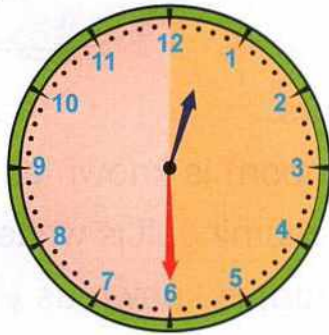
The minute hand is at 6.

The hour hand is between 12 and 1.

The time is 12:30 or half past 12.
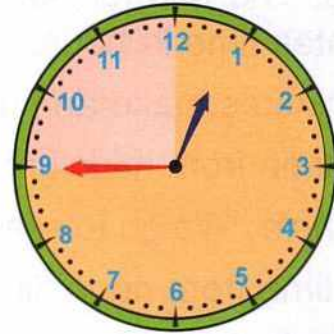
The minute hand is at 9.

The hour hand is close to 1.

The time is 12:45 or quarter to 1.

Some More Clocks
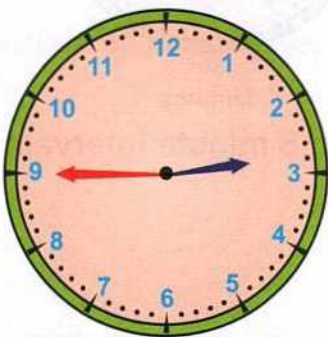
The minute hand is at 9.
The hour hand is close to 3.
The time is 2:45 or quarter to three.
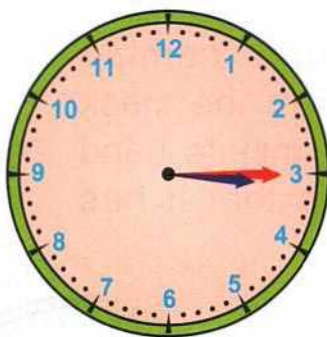
The minute hand is at 3.
The hour hand is also near 3.
The time is 3:15 or quarter past three.
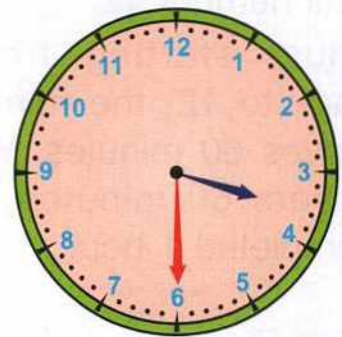
The minute hand is at 6.
The hour hand is between 3 and 4.
The time is 3:30 or half past three.

Exercise

A. Look at the clocks and write the time shown in the clouds below :

The short hand is near 4

The long hand is at 3

The time is

The short hand is at ____

The long hand is at ____

The time is   o'clock

The short hand is between ____

The long hand is at ____

The time is

The short hand is between ____

The long hand is at ____

The time is

The short hand is at ____

The long hand is at ____

The time is   o'clock

The short hand is between ____

The long hand is at ____

The time is

The short hand is at 1

The long hand is at 12

The time is   o'clock

The short hand is at ____

The long hand is at ____

The time is   o'clock

The short hand is between ____

The long hand is at ____

The time is

B. Write the time shown by each clock.

| : | | : | | : | | : |

| : | | : | | : | | : |

C. Draw the hands as per the time given below each clock.
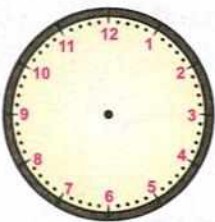
Quarter to 11   3 o' clock   Half past 9   Quarter past 6
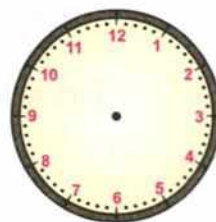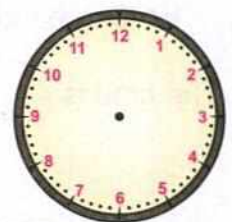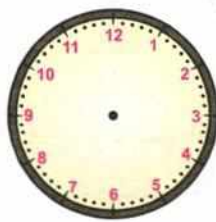
Quarter to 5   Quarter to 12   Half past 10   Quarter past 7
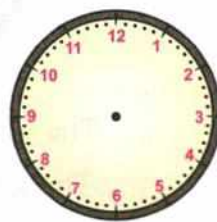
Calculating Time

Example 1 Neha's favourite TV cartoon starts at 6 o'clock in the evening. If the cartoon lasts for 30 minutes, then at what time will it get over ?

6 : 00 → 6 : 30
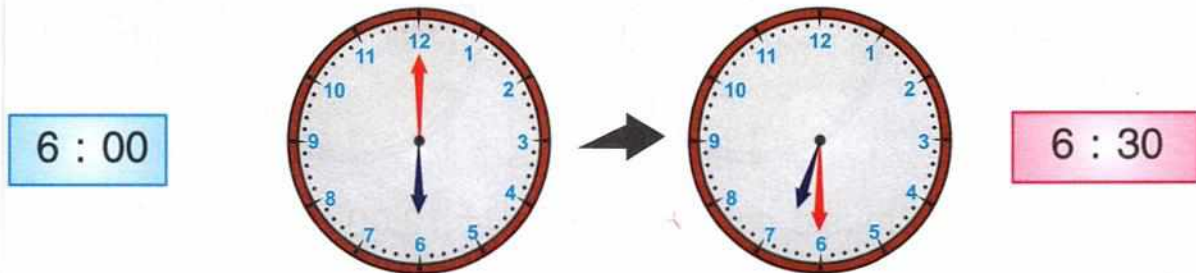
The cartoon will get over by **6:30 p.m.**

Example 2 Rohit starts doing his mathematics homework at 4:15 in the afternoon. He completes it in 15 minutes. What time is it when he finished his homework ?

4 : 15 → 4 : 30
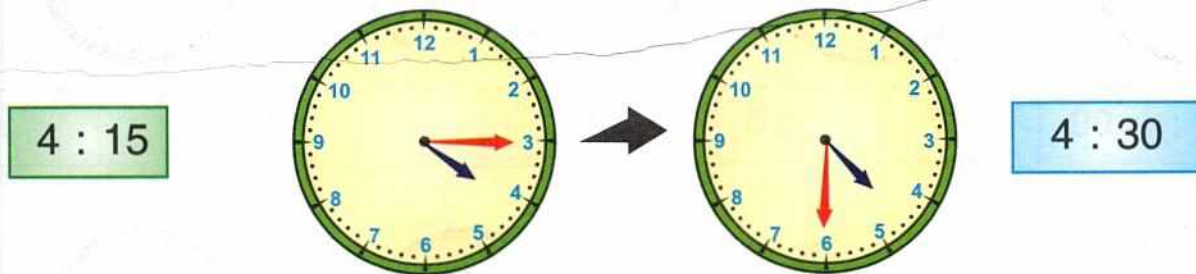
Rohit finished his homework at 4:30 p.m. in the afternoon.

Example 3 Harsh's exam will start at 10:30 in the morning. He has to reach the examination centre atleast an hour before. At what time should Harsh reach the centre ?

9 : 30 ← 10 : 30
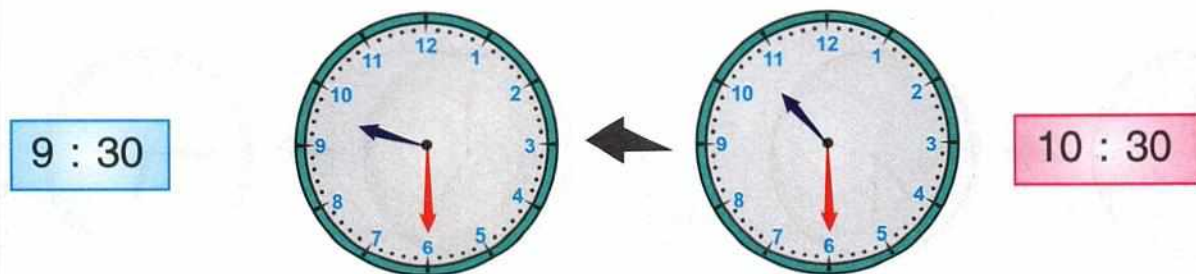
Harsh should reach the examination centre by **9:30 a.m.**

Example 4　A music concert ended at 12:45 p.m. If the concert was of 45 minutes, then at what time did it start ?

12 : 00

12 : 45
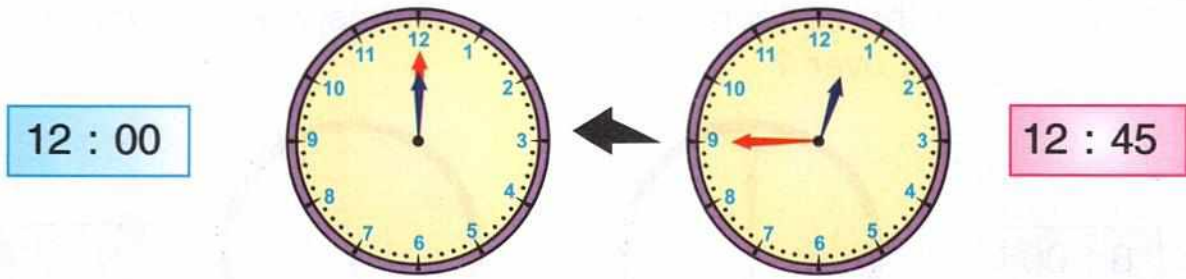
The music concert started at 12:00 p.m.

Exercise

D.　How much time has passed ?

15 minutes

| 8 | : | 00 |

| 8 | : | 15 |

| | : | |

| | : | |

minutes

| | : | |

| | : | |

minutes

| | : | |

| | : | |

minutes

| | : | |

| | : | |

minutes

| | : | |

| | : | |

Self Assessment

A. Choose the correct answers.

1. Number name of 457 is :
   (a) Four hundred fifty two
   (b) Four five seven
   (c) Four hundred fifty seven
   (d) Four hundred five seven

2. The number for nine hundred seventy eight is :
   (a) 900 + 80 + 7
   (b) 900 + 00 + 8
   (c) 978
   (d) 987

3. What is the face value of 0 in 308 ?
   (a) 8
   (b) 0
   (c) 3
   (d) None of these

4. What is the place value of 8 in 389 ?
   (a) 8
   (b) 800
   (c) 80
   (d) 0

5. Write the expanded form of 378.
   (a) 3 + 7 + 8
   (b) 37 + 8
   (c) 300 + 78
   (d) 300 + 70 + 8

6. Write the compact form of : 200 + 60 + 7
   (a) 267
   (b) 276
   (c) 257
   (d) 672

7. If we add 0 to a number, we get
   (a) 0
   (b) the number itself
   (c) 1
   (d) 10

8. When we subtract a number from itself, we get :
   (a) 3
   (b) 2
   (c) 1
   (d) 0

9. The long hand of a clock is called :
   (a) Hour hand
   (b) Minute hand
   (c) Time
   (d) Time period

10. We read time normally in :
    (a) Seconds
    (b) Minutes
    (c) Hours and minutes
    (d) Hours

11. The number between 559 and 561 is :
   (a) 562   (b) 558   (c) 560   (d) 557

12. When we subtract 65 from 270, we get :
   (a) 38   (b) 45   (c) 205   (d) 92

13. Mention the shape that does not have a corner :
   (a) Square   (b) Rectangle   (c) Triangle   (d) Circle

14. Arrange the numbers 832, 234, 150, 123 and 870 in ascending order :
   (a) 832, 123, 234, 150, 870   (b) 123, 150, 234, 832, 870
   (c) 832, 870, 123, 234, 150   (d) 234, 150, 832, 870, 123

15. Arrange the numbers 342, 231, 150, 144 and 300 in descending order :
   (a) 342, 144, 231, 300, 150   (b) 144, 342, 231, 300, 150
   (c) 150, 144, 300, 231, 342   (d) 342, 300, 231, 150, 144

16. The number of days in a leap year is :
   (a) 365   (b) 367   (c) 366   (d) 364

17. The greatest number among the numbers 900, 879, 435, 125 and 300 is :
   (a) 879   (b) 900   (c) 300   (d) 435

18. The smallest number among the numbers 245, 125, 342, 680 and 418 is :
   (a) 245   (b) 680   (c) 418   (d) 125

B. Fill in the blanks.

1. When we add two numbers, the result is called ....

2. Numbers 918, 832, 741, 526 and 132 are in .... order.

3. Multiplication is .... addition.

4. Division is .... subtraction.

5. $156 + 400 + 231 = 400 + 231 + 156 = $ ....

6. $280 \times 7 = $ ....

7. If we add 1 to any number, we get the .... number.

8. Place value of 6 in 623 is ....

9. A rectanlge has .... corners.

10. The next number in the number pattern 37, 47, 57, 67, 77 is ....

11. A day has .... hours.

12. In a leap year, February has .... days.

13. 24 ÷ 3 = ...

14. When a square paper is folded in the middle, we get two ....

15. We use a simple balance to find the .... of a body or object.

C. Answer the following questions.

1. Write the expanded forms of 235 and 409.

2. Write the numbers that come before and after 765.

3. Find the sum of 387 and 438.

4. Divide 414 by 9 using long division method.

5. Find the difference between 529 and 230.

D. Data interpretation

1. The following table represents the number of snacks sold in a school canteen. Read the data and answer the questions that follow.

Snacks	Number of snacks sold
Biscuit	25
Pastry	40
Chocolate	12
Pizza	32
Sandwich	16

(a) Which snack was sold the maximum ?

(b) Which snack was sold the least ?

(c) How many items were sold in all ?

(d) How many pizzas were sold ?

2. The following pictograph shows the favourite fruits of 40 children. Read the information carefully and answer the questions that follow :

Fruits	Number of children liking the fruits
🍎	☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺
🍌	☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺
🍊	☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺
🥭	☺ ☺ ☺ ☺ ☺ ☺

(a) How many students like banana ?

(b) How many students like papaya ?

(c) Which is the most liked fruit ?

(d) Which is the least liked fruit ?

E. Measurement

Complete the sentences :
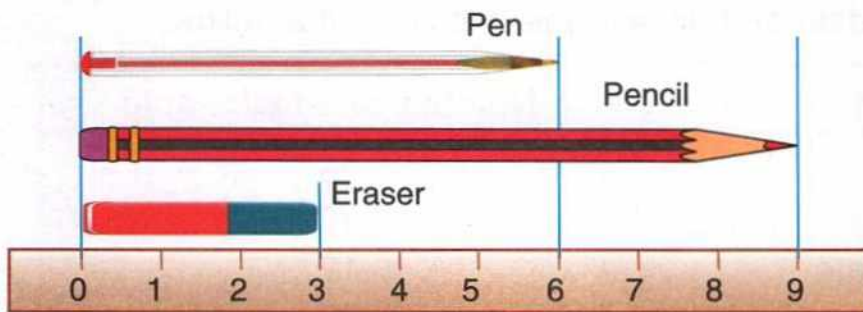
(a) The length of the pen is .... units.

(b) The length of the pencil is .... units.

(c) The length of the eraser is .... units.

(d) The pencil is longer than the pen by .... units.

F. Match the following.

1.

Column A	Column B
(1) Money is in the form of	(a) ₹ 10, ₹ 20, ₹ 50, ₹ 100, ₹ 200, ₹ 500, ₹ 2000
(2) ₹ 2000	(b) ₹ 1, ₹ 2, ₹ 5, ₹ 10
(3) Currency notes in circulation	(c) One rupee
(4) Coins in circulation	(d) Coins and paper currency
(5) 100 paise	(e) The largest paper currency of India

2.

Column A

(1) Quarter to 4

(2) 15th August

(3) 4 : 15

(4) Day before weekend

(5) I wake up for school
    at 6 o'clock

(6)

(7)

(8) I go to play with my friends
    at 6 o'clock

(9) Monday

(10) Children's Day

Column B

(a) Friday

(b) Half past 4

(c) 6 : 00 p.m.

(d) I have my dinner at 9 : 00 p.m.

(e) November 14th

(f)

(g) 3 : 45

(h) First day of the week

(i) 6 : 00 a.m.

(k) Independence Day

3.

Column A	Column B
(1) 285	(a) Three hundred forty seven
(2) 183	(b) 500 + 40 + 3
(3) 347	(c) **3** hundreds + **2** tens + **1** one
(4) 543	(d) 100 + 80 + 3
(5) 321	(e) **2** hundreds + **8** tens + **5** ones

4.

Column A	Column B
(1) Data	(a) A sphere
(2) A 2-D figure	(b) Paper clip
(3) A 3-D figure	(c) Triangle
(4) A non-standard unit for measuring length	(d) The amount of liquid the vessel can hold
(5) Capacity of a vessel	(e) Collection of information.

G. Telling time.

1. Write the time shown in each of the following clocks :

(a)
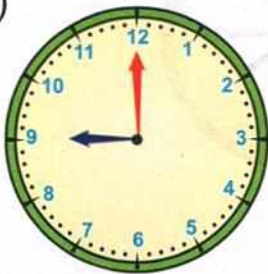
(b)

(c)

....

....

....

(d)

(e)

(f)

....

....

....

2. Draw the hour hand and the minute hand to show the given time.

(a) 10 : 30
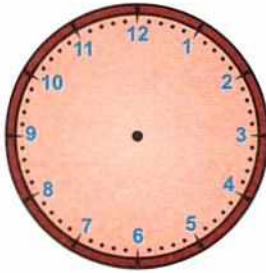
(b) 4 : 15
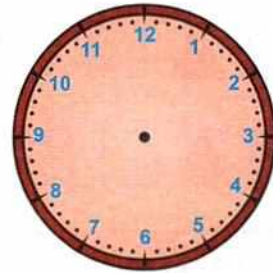
(c) 8 : 00
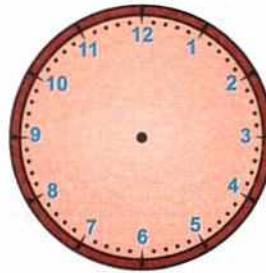
(b) 1 : 45
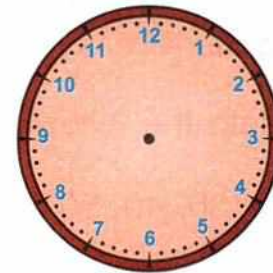
(e) 7 : 45
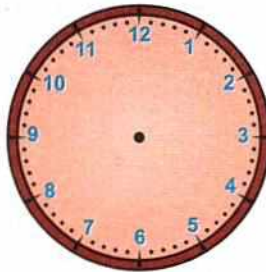
(f) 9 : 30
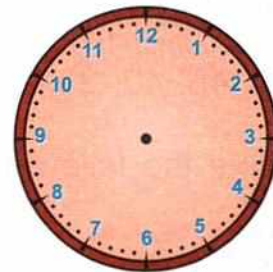
H. Perform the activities given below.

1. Construct the multiplication table of 7 using straws.

2. Take the following objects and trace their bases in your note book. Name the shapes and colour them.

(a) A pencil   (b) A water bottle   (c) A dice

3. Draw an abacus and represent the following numbers.

(a) 245   (b) 986   (c) 567   (d) 658

I. Completing patterns.

1. Complete the following shape patterns :

(a) ....

(b) ....

(c) ....

(d) ....
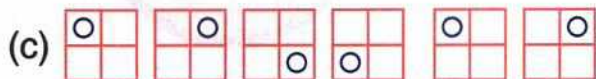
2. Complete the following number patterns :

(a) 20, 30, 40, 50, ..., ..., ..., ...

(b) 8, 16, 24, 32, ..., ..., ..., ...

(c) 15, 20, 25, 30, ..., ..., ..., ...

(d) 50, 45, 40, 35, ..., ..., ..., ...

3. Complete the following letter patterns :

(a) Z, Y, X, W, ..., ..., ..., ...

(b) A, C, E, G, ..., ..., ..., ...

(c) A, BB, C, DD, E, FF, G, ..., ..., ..., ...

(d) A, BB, CCC, ..., ..., ..., ...

4. Complete the following patterns :

(b) , ...

(b) 210, 216, 222, ..., ..., ...

(c) AaB, CcD, EeF, GgH, ..., ..., ...

J. Play with shapes.

Look at the four given shapes :

Fill in the boxes with suitable shapes so that you have all the four shapes in each row and each column.

Let us learn an interesting method of multiplication.

It is known as **lattice multiplication**.

Procedure : In this method, a lattice or a grid of squares is made. Each square should have a diagonal. The numbers that are to be multiplied are written outside the lattice and their products are written inside it.

Example : 1   Multiply 42 by 5.

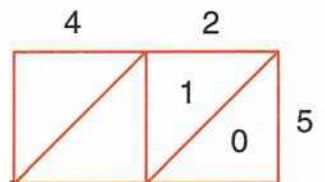**Step 1 :** For the multiplication of a 2-digit number by a 1-digit number, draw two squares as shown. Next, draw a diagonal in each square as shown.
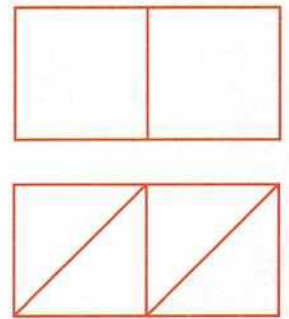
Step 2 : Write the multiplicand (42) on the top and multiplier (5) on the right side of the lattice as shown.
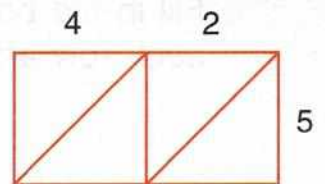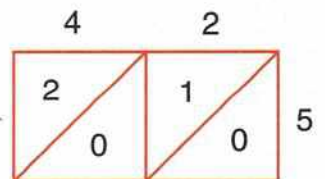
Step 3 : Multiply 2 by 5.

$2 \times 5 = 10$.

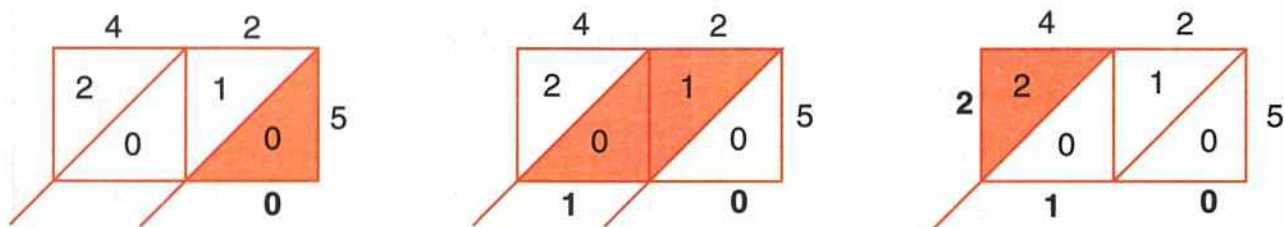Write the tens digit above the diagonal and the ones digit below it as shown.

Step 4 : Multiply 4 by 5.

$4 \times 5 = 20$.

Write the product as shown.

Step 5 : Add the numbers diagonally and write it outside the lattice as shown.
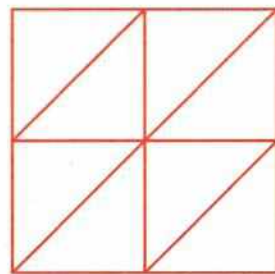

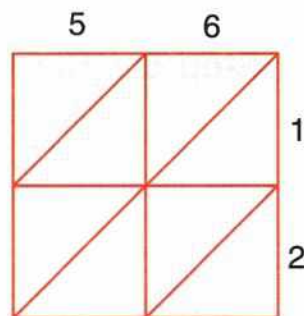**Step 6 :** Starting from the left, write the sum obtained as the answer.
Ans. 210

Example : 2   Multiply 56 by 12.

Step 1 : For the multiplication of a 2-digit number by a 2-digit number, draw a lattice as shown.

Step 2 : Write the multiplicand (56) on the top and multiplier (12) on the right of the lattice as shown.
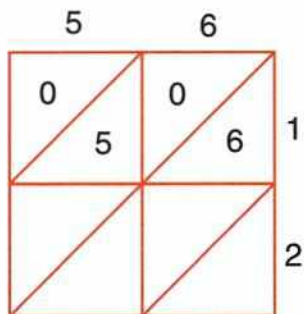

Step 3 : Multiply 6 by 1.

$6 \times 1 = 6$.

Write 0 as tens digit above the diagonal and 6 below the diagonal.

Similarly, multiply 5 by 1.

$5 \times 1 = 5$

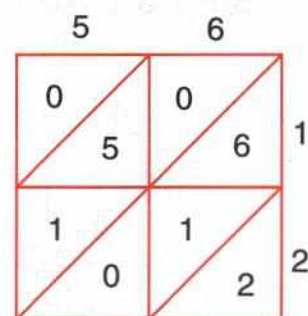Write 0 above the diagonal and 5 below it.

Step 4 : Now multiply 6 by 2.

$6 \times 2 = 12$.
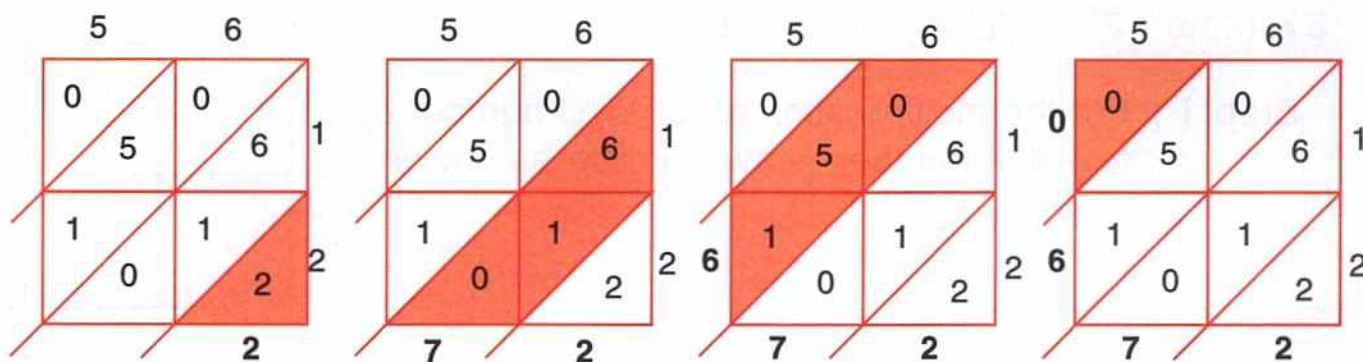
Write 1 above the diagonal and 2 below it as shown.

Similarly, multiply 5 by 2.

$5 \times 2 = 10$

Write the product as shown.

Step 5 : Add the numbers diagonally and write outside the lattice as shown.

Step 6 : Starting from the leftmost side, write the sums obtained as the answer.

Ans. 0672 or 672