

# Contents

<b>S.No.</b>	<b>Chapter Name</b>	<b>Page No.</b>
1.	Knowing the Numbers	5
2.	Whole Numbers	15
3.	Playing with Numbers	19
	📌 Revision Test Paper-I	31
4.	Integers	33
5.	Fractions	44
6.	Decimal	65
	📌 Revision Test Paper-II	75
	📌 Model Test Paper-I	77
7.	Introduction to Algebra	79
8.	Ratio and Proportion	87
9.	Basic Geometrical Ideas	104
	📌 Revision Test Paper-III	118
10.	Understanding Elementary Shapes	120
11.	Mensuration	141
12.	Data Handling	151
	📌 Revision Test Paper-IV	156
	📌 Model Test Paper-II	158
	📌 Answers	160

# 1

## Knowing the Numbers

Till now, we have learnt that every digit has a place value as well as face value. Face value of a number does not change whereas place value changes according to the position of the digit in a numeral.

No doubt, numbers play an important role in our daily life. We use them to count objects. We use them to arrange objects or collection in order.

In this chapter, we will learn how to count or calculate to solve problems in our daily life. We shall also learn how to recognise, read and write large numbers and do all the four fundamental operations i.e. Addition, Subtraction, Multiplication and Division.

Let us recall and review what we have learnt earlier.



### Numbers

A number such as 1, 2, 3 ..... etc is a symbol which is used to count or calculate. There are nine symbols in counting numbers. Every number has a name which is written in words. For example, one, two, three etc. These numbers are called **Counting numbers**.

We can divide counting numbers in two groups—**Natural numbers** and **Whole numbers**.

#### Natural Numbers

Counting numbers are called **natural numbers**. The first counting number is **1** and the last one is **infinity** as each numbers has its successor. We denote the set of natural number by N.

$$N = \{1, 2, 3, 4, \dots\}$$

#### Whole Numbers

When we include 0 in the set of natural numbers, we get a set of **whole numbers**.

We denote the set of whole number by W.

$$W = \{0, 1, 2, 3, \dots\}$$



### Facts to Know

- The smallest natural number is 1.
- We cannot find the largest natural number.

#### Successor

When one is added to a given natural number, we get the **successor** of that number. Hence, successor of 1 is  $1 + 1 = 2$ , successor of 2 is  $2 + 1 = 3$ , successor of 3 is  $3 + 1 = 4$  and so on.

#### Predecessor

When one is subtracted from a given natural number, we get the **predecessor** of that number. Hence predecessor of 2 is  $2 - 1 = 1$ , predecessor of 3 is  $3 - 1 = 2$ , predecessor of 4 is  $4 - 1 = 3$  and so on.



### Facts to Know

- Every natural number has a successor but every natural number does not have predecessor.



## Formation of Numbers with Digits

Let us consider the digits 3, 8 and 9. We can form different numbers using these three digits. The numbers are 389, 398, 839, 893, 938, 983. Here, the greatest number is 983 and the smallest number is 389.

### Ascending Order

Ascending order means the arrangement of numbers from the smallest number to the largest number.

### Descending Order

Descending order means the arrangement of numbers from the greatest number to the smallest number.

If one of the digits is a zero, then, place the zero at the second position while making the smallest number and place zero at the last while making the largest number.

### Comparison of Numbers

We follow the following procedure while comparing two natural numbers:

- ❖ The number with more digits is greater than the number with less digits.
- ❖ When the numbers have the same number of digits, we follow the following steps:
  - ❑ We first compare the left most place from the given numbers.
  - ❑ If they are equal, we compare the second digit from the left.
  - ❑ If the second digit from the left is also equal, we compare the third digit from the left and continue this process till we find different digits at the corresponding places.
  - ❑ The number with greater digit is greater.

**Example 1 :** Write the successor of each of the following :

(i) 209                      (ii) 750                      (iii) 1155                      (iv) 6412

**Solution :** The successors are :

(i)  $209 + 1 = 210$       (ii)  $750 + 1 = 751$       (iii)  $1155 + 1 = 1156$       (iv)  $6412 + 1 = 6413$

**Example 2 :** Write the predecessors of each of the following :

(i) 126                      (ii) 877                      (iii) 1001                      (iv) 3105

**Solution :** The predecessors are :

(i)  $126 - 1 = 125$       (ii)  $877 - 1 = 876$       (iii)  $1001 - 1 = 1000$       (iv)  $3105 - 1 = 3104$

**Example 3 :** Using the following digits make the greatest and the smallest 4-digit numbers without repeating the digits.

(i) 7, 6, 9, 8                      (ii) 3, 5, 1, 7                      (iii) 8, 4, 9, 1                      (iv) 8, 6, 7, 1

<b>Solution :</b>	(i) Greatest : 9876	Smallest : 6789
	(ii) Greatest : 7531	Smallest : 1357
	(iii) Greatest : 9841	Smallest : 1489
	(iv) Greatest : 8761	Smallest : 1678

**Example 4 :** Compare 7580 and 12512.

**Solution :** Here 7580 has four digits while 12512 has five digits.

We know that number having more digits is greater

$\therefore 12512 > 7580$

**Example 5 :** How many 3 digit numbers can be formed by using the digits 0, 4 and 7 without repeating any digit.

**Solution :** Placing 0 at one's place, we can have two natural numbers 470 and 740. While placing 0 at tens place we can have two natural numbers 407 and 704.

Zero cannot be placed at hundreds place.

Hence, the numbers are 470, 740, 407 and 704.





**Example 6 :** Which is greater : 96428 or 96728

**Solution :** Here both the numbers have five digits.

Ten thousands place and thousands place both the numbers have same digits.

At hundreds place the first number is 4 while the second number is 7.

We know that  $7 > 4$

Hence,  $96728 > 96428$



## Exercise 1.1

1. Give answers of the following questions :

- (a) Write the smallest natural number.
- (b) Write the largest natural number.
- (c) Write the smallest 3-digit natural number.
- (d) Write the largest 3-digit natural number.

2. Write the successors of the following natural numbers:

- (a) 69
- (b) 786
- (c) 1252
- (d) 6789

3. Write the predecessors of the following natural numbers:

- (a) 40
- (b) 251
- (c) 5000
- (d) 39283

4. Write all counting numbers between :

- (a) 35 and 49
- (b) 105 and 129
- (c) 5212 and 5221
- (d) 8413 and 8425

5. Write four consecutive natural numbers starting from 23.

6. Arrange the following numbers in the descending order:

- (a) 1507, 948, 126, 288
- (b) 1515, 262, 2403, 175
- (c) 91, 285, 476, 8412
- (d) 976, 5628, 3784, 1789

7. Arrange the following numbers in the ascending order:

- (a) 178, 6965, 1150, 864
- (b) 890, 860, 712, 700
- (c) 88, 69, 115, 162
- (d) 2003, 2006, 2018, 1989

8. Write the smallest five-digit number, without repeating the digits, for the following:

- (a) 5, 3, 7, 6, 2
- (b) 8, 3, 1, 5, 7
- (c) 3, 6, 4, 1, 2
- (d) 4, 7, 0, 2, 9

9. Write the largest five-digit number, without repeating the digits, for the following:

- (a) 8, 1, 5, 7, 9
- (b) 2, 3, 4, 7, 0
- (c) 4, 9, 6, 5, 2
- (d) 6, 9, 3, 4, 7

10. Write all 3-digit even numbers which can be formed using the digits 8, 6 and 3 without repeating any digit.

11. How many times does 9 occur if we write all counting numbers from 1 to 100?



## Place Value and Face Value

When a number has more than one digit, each digit has a value depending upon its position. For example, 83 is a 2-digit number. We can expand 83 as follows :

$$83 = 80 + 3 = 8 \times 10 + 3$$

In the same way, we can expand a 3-digit number say 345 as :

$$\begin{aligned} 345 &= 300 + 40 + 5 \\ &= 3 \times 100 + 4 \times 10 + 5 \end{aligned}$$





Here, 5 is at ones place, 4 is at tens place and 3 is hundreds place.

Again the expansion of 6475 is

$$\begin{aligned}
 6475 &= 6000 + 400 + 70 + 5 \\
 &= 6 \times 1000 + 4 \times 100 + 7 \times 10 + 5
 \end{aligned}$$

Thus, the place value of a digit depends upon its position in the number. But face value of a digit remains the same. It does not depend upon the position it occupies.

A numeral can be represented by either of the following place value charts – **Indian System** and **International System**. Let us look at the place value division in both the systems.



### Facts to Know

- The face value of a digit is the value of the digit itself. It never changes.

#### Indian System

The table given below shows the Indian System of Numeration.

Arabs		Crores		Lakhs		Thousands		Ones		
Ten Arabs	Arabs	Ten Crores	Crores	Ten Lakhs	Lakhs	Ten Thousands	Thousands	Hundreds	Tens	Ones
10,00,00,00,000	1,00,00,00,000	10,00,00,000	1,00,00,000	10,00,000	1,00,000	10,000	1000	100	10	1

In Indian system of numeration, the periods are separated into **Ones**, **Thousands**, **Lakhs**, **Crores** and **Arabs**.

The Ones period has three digits and the remaining periods have two digits each.

**For example:** 5, 76, 028 is read in five lakh, seventy six thousand and twenty eight.

#### International System

The following table shows the International System of numeration :

Billions			Millions			Thousands			Ones		
Hundred Billions	Ten Billions	Billions	Hundred Millions	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
100,000,000,000	10,000,000,000	1,000,000,000	100,000,000	10,000,000	1,000,000	100,000	10,000	1000	100	10	1





In International System of numeration, the periods are separated into **Ones**, **Thousands**, **Millions** and **Billions**. Each period has three digits. Periods make the number easier to read the number.

**For example :** 576028 is read as Five hundred seventy six thousand and twenty eight.

**Example 7 :** According to Indian System of numeration find the place value and face value of each digit in 684295.

**Solution :** According to the Indian system of numeration, the digits of the given number are arranged in the following way :



### Facts to Know

- 1 million = 10 lakh
- 1 billion = 100 crore

Lakhs	Ten Thousands	Thousands	Hundreds	Tens	Ones
6	8	4	2	9	5

- (i) The place value of 5 is 5 ones  
The face value of 5 is 5 = 5
- (ii) The place value of 9 is 9 tens = 9 × 10 = 90  
The face value of 9 is 9
- (iii) The place value of 2 is 2 hundreds = 2 × 100 = 200  
The face value of 2 is 2
- (iv) The place value of 4 is 4 thousands = 4 × 1000 = 4000  
The face value of 4 is 4
- (v) The place value of 8 is 8 ten thousands = 8 × 10,000 = 80,000  
The face value of 8 is 8
- (vi) The place value of 6 is 6 lakhs = 6 × 1,00,000 = 6,00,000  
The face value of 6 is 6

**Example 8 :** Write 4652678 in the International System of numeration.

**Solution :** First Arrange the number in periods, then put comma as given below:

M T O  
4, 652, 678

The number is read as four million six hundred fifty two thousand and six hundred seventy eight.

**Example 9 :** Write the following in numeric form and put commas accordingly.

- (i) Eight crore sixty two lakh twenty five thousand four hundred five.
- (ii) Sixty two million four hundred forty thousand and seven hundred two

**Solution :** (i) 8, 62, 25, 405  
(ii) 62, 440, 702

**Example 10 :** Read the following number as per International System of numeration. Also write them in the place value chart.

- (i) 675320                      (ii) 4278325                      (iii) 26754308                      (iv) 58436729

**Solution :** (i) Six hundred seventy five thousand, three hundred and twenty  
(ii) Four million, two hundred seventy eight thousand, three hundred twenty five



- (iii) Twenty six million, seven hundred fifty four thousand and three hundred eight.  
 (iv) Fifty eight million, four hundred thirty six thousand, seven hundred twenty nine.

Now, we arrange these numerals in place value chart:

TM	M	HTh	TTh	Th	H	T	O
		6	7	5	3	2	0
	4	2	7	8	3	2	5
2	6	7	5	4	3	0	8
5	8	4	3	6	7	2	9



## Exercise 1.2

1. Find the place value and the face value of the digits in the following numerals as per the Indian system of numeration.

- (a) 6 in 62580      (b) 8 in 472816      (c) 5 in 6567      (d) 9 in 98654  
 (e) 6 in 25689      (f) 7 in 76984      (g) 5 in 15887      (h) 2 in 42895

2. Write the following in words according to Indian System of numeration.

- (a) 486921      (b) 589708      (c) 767891      (d) 786529  
 (e) 795638      (f) 824905      (g) 358762      (h) 976428

3. Write the following numerals in words according to International System of numeration.

- (a) 485567      (b) 486528      (c) 5892068      (d) 6425895  
 (e) 6756243      (f) 6251352      (g) 8948842      (h) 3462548

4. Write the following numerals with proper commas for the following.

- (a) Sixty lakh fifty seven thousand five hundred twenty one.  
 (b) Eighty two lakh twenty three thousand six hundred and forty six.  
 (c) Seven crore five lakh twenty two thousand three hundred ninety six.  
 (d) Sixty five million four hundred twenty seven thousand and three hundred seventy eight  
 (e) Eighty seven million six hundred thirty eight thousand and six hundred twenty eight  
 (f) Sixty million nine hundred thirty six and seven hundred five  
 (g) Two billion eight million nine hundred thirty eight thousand and four hundred seventy two

5. Fill in the blanks of the following.

- (a) 1 million = ..... lakh  
 (b) 10 million = ..... crore  
 (c) 1 crore = ..... lakh  
 (d) 1 lakh = ..... thousands





## Comparison of Numbers

As we know, there are following two rules for the comparison of numbers:

**Rule 1 :** The number with more digits is greater.

**Rule 2 :** If the number have same number of digits in both the numbers, then

**Step 1 :** First compare the left most digit in both the numbers.

**Step 2 :** If they are equal in value, then compare the second left most digit in both the numbers.

**Step 3 :** If they are also equal in value, then compare the third left most digit in both the numbers.

**Step 4 :** Continue this process, until you get the unequal digits.

Clearly, the number with greater digit will be greater.

**Example 1 :** Compare the following numbers:

(a) 834652 and 7045192                      (b) 6204569 and 6204569

(c) 28565291 and 28564721

**Solution :** (a) 834652 and 7045192

Since 7045192 has more digits than 834652

$^{\wedge}$   $834652 < 7045192$

(b) 6204569 and 6204569

Let us arrange the given numbers in a place value chart

Ten Lakhs	Lakhs	Ten Thousands	Thousands	Hundreds	Tens	Ones
6	2	0	4	5	6	9
6	2	0	4	5	6	9

Clearly, both the numbers are same.

$^{\wedge}$   $6204569 = 6204569$

(c) 28565291 and 28564721

Let us arrange the given numbers in a place value chart

Crores	Ten Lakhs	Lakhs	Ten Thousands	Thousands	Hundreds	Tens	Ones
2	8	5	6	5	2	9	1
2	8	5	6	4	7	2	1

Clearly, at the thousands place  $5 > 4$ .

$^{\wedge}$   $28565291 > 28564721$

**Example 2 :** Arrange the following numbers in ascending order :

31204751, 1243039, 29300597, 31121469, 83456721

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

Crores	Ten Lakhs	Lakhs	Ten Thousands	Thousands	Hundreds	Tens	Ones
3	1	2	0	4	7	5	1
	1	2	4	3	0	3	9
2	9	3	0	0	5	9	7
3	1	1	2	1	4	6	9
8	3	4	5	6	7	2	1

Clearly, from the place value chart:

$1243039 < 29300597 < 31121469 < 31204751 < 83456721$



Hence, the ascending order of given numbers are:  
1243039, 29300597, 31121469, 31204751, 83456721

**Example 3 :** Arrange the following numbers in descending order :  
7642008, 83407295, 53487029, 4302013, 3010542

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

Crores	Ten Lakhs	Lakhs	Ten Thousands	Thousands	Hundreds	Tens	Ones
	7	6	4	2	0	0	8
8	3	4	0	7	2	9	5
5	3	4	8	7	0	2	9
	4	3	0	2	0	1	3
	3	0	1	0	5	4	2

Clearly, from the place value chart:

$83407295 > 53487029 > 7642008 > 4302013 > 3010542$

Hence, the descending order of given numbers are :

83407295, 53487029, 7642008, 4302013, 3010542



## Exercise 1.3

1. Compare ( $>$ ,  $<$ ,  $=$ ) the following numbers:

- (a) 85129861 and 79151562                      (b) 4201568 and 438500  
(c) 9246802 and 9246802                      (d) 2852110 and 2852110  
(e) 4320156 and 4320159                      (f) 7642348 and 7642337

2. Arrange the following numbers in ascending order:

- (a) 72791, 38170, 35507, 36105  
(b) 43565103, 7384015, 1045621, 98004865, 32465902  
(c) 2045629, 1245203, 74305709, 8420659, 1090405  
(d) 40506080, 12450311, 60050102, 15112011, 70051121  
(e) 983400974, 4352629, 70080405, 3040129, 83400291

3. Arrange the following numbers in descending order:

- (a) 5150, 5990, 75200, 6710  
(b) 28460011, 1004691, 2709472, 7642095, 834280095  
(c) 8706512, 3326594, 5426179, 8050672, 708059162  
(d) 5040550, 4121127, 4495821, 5142125, 4652112  
(e) 98370521, 73226459, 83462050, 60402032, 54005906





## Points to Remember



- ❖ Counting numbers are called Natural Numbers.
- ❖ There are 10 symbols to denote numbers. They are 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9.
- ❖ The place value of any digit depends on its position in the number.
- ❖ The smallest natural number is 1.
- ❖ The face value of any digit is the digit itself regardless of its position in the number.
- ❖ There are two numeration systems — the Indian System and the International System.
- ❖ The periods in the Indian System of numeration are ones, thousands, lakhs, crores, and arabs.
- ❖ The first three places from the right makes the ones period, the next two places make the thousands period and the next two places make the lakhs period and so on, in the Indian System of numeration.
- ❖ The periods in the International System of numeration are hundreds, thousands, million, and billions.
- ❖ The first three places from the right make the ones period, the next three places make the thousands period and the next three places make millions period, and so on in the International System of numeration.



## EXERCISE

### 1. MULTIPLE CHOICE QUESTIONS (MCQs):

Tick (✓) the correct options :

(a) The smallest natural number is :

- (i) 0  (ii) 1  (iii) 2  (iv) 9

(b) The successor of 101 is :

- (i) 100  (ii) 99  (iii) 102  (iv) 105

(c) Twenty four crore, six thousand seven can be written in numeral as:

- (i) 240060007  (ii) 240006007  (iii) 24000067  (iv) 2406007

(d) The place value of 7 in 8975423 is:

- (i) 7000  (ii) 70,000  (iii) 700000  (iv) 700

(e) The capacity of an eye drop medicine is 50 ml, how many days will it last if a patient uses it 5 ml 5 times a day?

- (i) 1 day  (ii) 2 day  (iii) 3 day  (iv) 4 days

(f) If a swimmer crosses 1 km 75m tunnel, the distance covered in m is:

- (i) 1750 m  (ii) 1075 m  (iii) 1175 m  (iv) 10075 m

(g) Total weight of three geometry box weighing 25 g, 75 g and 80 g is:

- (i) 180 g  (ii) 280 g  (iii) 80 g  (iv) 200 g



2. Arrange the following numbers in the ascending order:

- (a) 519, 410, 1011, 712, 918 (b) 9008, 9080, 9280, 8009, 8090  
(c) 315, 169, 181, 692, 715 (d) 4028, 4008, 4800, 4828, 4598

3. Arrange the following numbers in the descending order:

- (a) 272, 467, 298, 359, 978 (b) 991, 919, 979, 969, 999  
(c) 1985, 7891, 4258, 3981, 8175 (d) 7890, 7889, 7650, 7668, 7968

4. Write the following numbers in words according to International System of numeration.

- (a) 295678 (b) 487621 (c) 410135  
(d) 6425895 (e) 17563289 (f) 68615001

5. Write the following numerals in words according to Indian System of numeration:

- (a) 1083756 (b) 8081993 (c) 98188305  
(d) 75618830 (e) 2593247 (f) 78192348

HO  
S

I am a two digit number below 50. The sum of the digits is 13. The product of the digit is 36. Who am i?

Lab  
Activity

Objective : To use number cards to compare numbers.

Materials Required : A chart

Procedure :

Cut a 10 cm × 10 cm piece of chart paper for each student in a class. On each card print any digit from 0 to 9. Draw the chart given below such that each cell is about 10 cm × 10 cm.

- ❖ Divide the class into groups of nine each. Each group selects one person as its leader. The groups are named A, B, C, etc.
- ❖ Each student select a card without looking at the printed number on it.
- ❖ Each student in each group is now required to fix his/her number card on the chart in any blank space on the chart in the row assigned to his/her team.
- ❖ Once every student has fixed his/her number on the chart, the leader of each group reads out the number formed.

	1	2	3	4	5	6	7	8	9
A									
B									
C									
D									
E									

- ❖ The group with the largest nine-digit number is the winner.



# 2

# Whole Numbers

We have learnt that counting numbers are called **natural numbers**. The smallest natural number is 1. Natural numbers are denoted by N.

Thus,  $N = \{1, 2, 3, 4, 5, \dots\}$

In our daily life we come across many situations where the result cannot be represented by a natural number. Suppose Gopi had 15 toffees. He gave 10 toffees to her sister and 5 toffees to his friend. How many toffees were left with him? Certainly there were no toffee left with him. To denote 'no' or 'nothing' one more symbol is introduced, which is called **zero (0)**. It is not a part of natural number. The set of natural numbers along with zero gives a set of numbers called **whole numbers**. Whole numbers are denoted by W.

Thus,  $W = \{0, 1, 2, 3, 4, \dots\}$



## Facts to Know

The number system was developed in India around the 3rd century BC but the use of zero started around 700 AD. In India the word for zero was 'shunya' that means nothing. The Arabs called it 'cypher' meaning nothing, which later became zero.

The concept of zero had played a significant role in the development of Mathematics. It helped to develop the decimal place value system of numbers. In spite of having no value itself, zero adds to the value of a number. As we know 10 becomes 100, 100 becomes 1000 and so on by merely adding zero to the right of a natural number. In this chapter, we will learn about whole numbers, their properties and the process of formulation of patterns.



## Representation of Whole Numbers on Number Line

To represent whole numbers on a number line, we proceed as follows:

- ❖ Draw a line and mark a point 0 on it representing the number zero.
- ❖ Mark another point to the right of zero and label it 1. The distance between these points labelled as 0 and 1 is called a **unit distance**.



- ❖ Mark another point to the right of 1 at a unit distance and name it 2. Continue labelling points at unit distances to the right and label them as 3, 4, 5, ..... on the line as shown in the figure.

Now, answer the following questions:

What is the distance between the points 4 and 9? Obviously it is 5 units.

What is the distance between 3 and 7? It is 4 units. On the number line, we see that 7 is to the right of 3.

$\therefore 7 > 3$ . Similarly, 8 is to the right of 7 and 10 is to the right of 9.

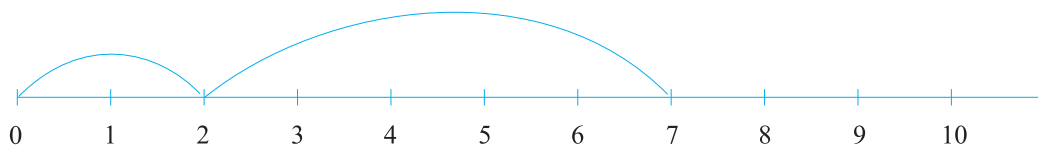
Thus, from the number line we observe that :

- ❖ The number on the right of the other number is greater number.
- ❖ Every whole number has its successor. Successor of 0 is 1, of 1 is 2, of 2 is 3 and so on. Thus, there are infinite number of whole numbers.
- ❖ 0 is the smallest whole number.



## Addition on Number line

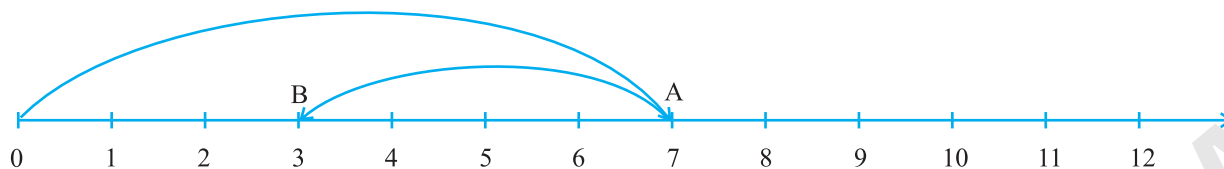
Addition of whole numbers can be shown on the number line. Let us represent addition of 2 and 5.



From 0 we move two steps towards right and then move five more steps towards right. We reach to the point 7. Thus, the sum of 2 and 5 is 7, i.e.  $2 + 5 = 7$

## Subtraction on Number line

Subtraction of two whole numbers can also be shown on the number line. Let us find  $7 - 4$ .



From 0, we move 7 steps to the right and reach point A. Now we move 4 steps to the left of A. We reach the point B which represents 3. Thus,  $7 - 4 = 3$

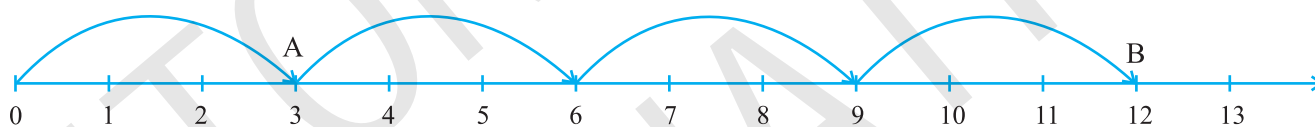


## Facts to Know

If any whole number (except 0) is subtracted from zero, then the result is not a whole number.

## Multiplication on Number Line

Now we shall represent multiplication of whole numbers on the number line. Let us find  $3 \times 4$ .



From 0 we move 3 steps towards right and reach point A. Repeat this move three times and we reach point B. What does the point B indicates? It indicates the movement of 12 steps to right of zero (0).

Thus,  $3 \times 4 = 12$ .



## Exercise 2.1

- Write the next four natural numbers after 10799.
- Write the three whole numbers occurring just before 12001.
- How many whole numbers are there between 78 and 89.
- Write the predecessor of:**  
(a) 75      (b) 15001      (c) 101010      (d) 32546
- Write the successor of:**  
(a) 178      (b) 354568      (c) 49999      (d) 297805
- See the following pairs of numbers, write which whole number is on the left of the other number on the number line. Also write them with the appropriate sign ( $>$ ,  $<$ ) between them.**  
(a) 997, 979      (b) 92392, 92932      (c) 320001, 320101      (d) 999949, 100049



## Points to Remember

- ❖ To count things, natural numbers are used. 1 is the smallest natural number.
- ❖ The set of whole numbers is denoted as  $W = \{0, 1, 2, 3, \dots\}$
- ❖ We can represent whole numbers on number line.
- ❖ Zero (0) is the smallest whole number.
- ❖ We can add and subtract whole numbers on number line.
- ❖ We can also find the multiplication of whole numbers on number line.



## EXERCISE

### 1. MULTIPLE CHOICE QUESTIONS (MCQs):

Tick (✓) the correct options.

- (a) Which number was introduced to the set of natural numbers (N) to make it a whole number set?
- (i) 2  (ii) -2  (iii) 0  (iv) -5
- (b) On number line, 550 lies on ..... side of 505.
- (i) left  (ii) right  (iii) centre  (iv) none
- (c) Which whole number is not used as divisor ?
- (i) 1  (ii) 2  (iii) 5  (iv) 0
- (d) Which one is the multiplicative identity for whole numbers?
- (i) 0  (ii) 1  (iii) -1  (iv) 2
- (e) What will be the sum of first  $n$  odd natural numbers?
- (i)  $n + 1$   (ii)  $n - 1$   (iii)  $2n$   (iv)  $n^2$
- (f). To make a perfect square by using dots, the number of rows must be ..... to the number of columns.
- (i) less  (ii) more  (iii) unequal  (iv) equal

2. In a marriage hall, 28 chairs are arranged in a single row. Find the number of chairs if there are 15 such rows.
3. In a town 1 out of 30 people owns a motorcycle. If the total population of town is 67500, then how many people do have motorcycles?
4. Ritesh and Hitesh went for a long drive. They covered 210 km in 3 hours and still driving. After 10 hours they decided to drive for 1 more hours. Find the total distance travelled by them.
5. Saurabh distributes 4 boxes of sweets. Each box contain 6 chocolates and 8 candies. How many sweets are there in these 4 boxes?

(Hint : Based on distributive property)

6. A truck is loaded with 150 drums of water. On reaching the first dealer, it unloads 100 drums and unloads 20 drums on reaching second dealer. How many drums of water were left?
7. Tina secured 62 marks in Dance & Drama and 89 marks in English, whereas Twinkle secured 87 marks in English and 69 marks in Dance & Drama. Who secured better marks in the aggregate of subjects?

**HOTS** Give two examples each for explaining why associative property is not true for subtraction and division.

### Lab Activity

**Objective :** Making of elementary shapes by arranging numbers in a pattern.

**Materials Required :** White colour chart paper, green coloured round bindis.

**Procedure :**

- ❖ To make a triangle you need three bindis.



- ❖ When you add 3 more bindis to these 3 bindis, you get  $3 + 3 = 6$  bindis
- ❖ You can make a pattern like :



- ❖ Now, if 4 is added to 6, you get  $6 + 4 = 10$ . You will get a pattern like this:



- ❖ Similarly, next triangle can be formed as  $10 + 5 = 15$



- ❖ You can make more triangles of bindis by following the pattern.

$$\begin{aligned}
 &3 \\
 3 + 3 &= 6 \\
 6 + 4 &= 10 \\
 10 + 5 &= 15 \\
 15 + 6 &= 21 \\
 &\text{and so on.}
 \end{aligned}$$

