Knowing Our Numbers

Using Place Value Tables for Reading, Writing and Expanding Numbers

Do you know how many students are there in your class?

The number of students in your class would be a two-digit number or, at the maximum, a three-digit number. These are smaller numbers.

But if you are asked the number of students in your school, then it would be a bigger number.

The total number of students in a city would be a large number, i.e. at least a five-digit number.

And, if we count the total number of students in the whole country, then we would have to use very large numbers (like eight or nine-digit numbers). Therefore, here, we will learn about large numbers.

To understand a number, there are two most important things to know, **face value** and **place value** of each of its digits.

In a number, face value of each digit is the actual value of that digit and it never changes whether the number is written according to any numeral system.

Consider the number 3,69,821. In this number, face values of different digits are as follows:

Face value of 3 = 3

Face value of 6 = 6

Face value of 9 = 9

Face value of 8 = 8

Face value of 2 = 2

Face value of 1 = 1

Thus, we can read the number 7,86,790 easily as "Seven lakh eighty six thousand seven hundred and ninety".

Similarly, we can write the numeral value of any given number.

Do you know we also have a relation between different place values?

Thus, we must remember the following conversions which will be helpful in reading and writing numbers.

1 hundred = 10 tens

1 thousand = 10 hundreds = 100 tens

1 lakh = 100 thousands = 1000 hundreds

1 crore = 100 lakhs = 10,000 thousands

Let us now have a look at some examples to understand the concept better.

Example 1:

Write 6<u>5</u>0<u>8</u>92<u>7</u> in expanded form and write the place values and face values of underlined digits.

Solution:

The number 6508927 can be written in expanded form as follows:

$6508927 = 6 \times 1000000 + 5 \times 100000 + 0 \times 10000 + 8 \times 1000 + 9 \times 100 + 2 \times 10 + 7 \times 1$

Place value of 7 = one

Face value of 7 = 7

Place value of 8 = thousand

Face value of 8 = 8

Place value of 5 = lakh

Face value of 5 = 5

Example 2:

Write the following numbers in words and answer the questions given below.

432079, 5601729 and 1794805

(1) Which is the smallest number?

(2) Which is the largest number?

(3) Arrange these numbers in ascending and descending order.

Solution:

4,32,079 = Four lakh thirty two thousand and seventy nine

56,01,729 = Fifty six lakh one thousand seven hundred and twenty nine

17,94,805 = Seventeen lakh ninety four thousand eight hundred and five

(1) 4,32,079 is the smallest number.

(2) 56,01,729 is the largest number.

(3) Therefore, the numbers in the ascending order are 4,32,079, 17,94,805, and

56,01,729.

Numbers in descending order are 56,01,729, 17,94,805, and 4,32,079.

Example 3:

Write the expanded number [8000000 + 500000 + 70000 + 900 + 40 + 2] in the numeral form.

Solution:

The given number is 8000000 + 500000 + 70000 + 900 + 40 + 2.

In addition, the number can be written in complete expanded form as

8 × 1000000 + 5 × 100000 + 7 × 10000 + 0 × 1000 + 9 × 100 + 4 × 10 + 2 × 1

Thus, the numeral form is 8570942.

Indian and International System of Numeration

A teacher asked his students to write the number 800000000 in words.

Two of his students, Kunal and Arpit, wrote the number in different ways but the teacher said both are correct.

Kunal wrote the given number as eighty crore and Arpit wrote as eight hundred million.

Do you know why both are correct?

Kunal wrote the number according to the Indian number system and Arpit wrote the number according to the international number system.

Now, we will discuss two types of number systems according to which the numbers can be written in an easier way. The two types of number systems are

1. Indian number system
2. International number system

Let us now study about these.

INDIAN NUMBER SYSTEM

According to the Indian number system, the place value chart is divided into four groups - hundred, thousand, lakh, and crore. Each group is divided into subgroups.

INTERNATIONAL NUMBER SYSTEM

According to the International number system, the place value chart is divided into three groups - hundred, thousand and million. Each group is divided into subgroups.

Differences between the numerals according to the Indian and the International number system

Indian number system

In this system, the first comma comes after the hundredth digit (i.e. after first three digits from the right), the second comma comes after the ten thousandth digit (i.e. after five digits from the right), the third comma comes after the ten lakh digit (i.e. after seven digits from the right), and so on.

For example, the number 234567890 can be written according to the Indian number system as 23,45,67,890 and can be read as twenty three crore forty five lakh sixty seven thousand eight hundred and ninety.

International number system

In this system, the first comma comes after the hundredth digit (after three digits from right), the second comma comes after the hundred thousandth digit (after six digits from the right), the third comma comes after the thousand million digit (after nine digits), and so on.

For example, according to the international number system, the number 234567890 can be written as 234,567,890 and read as two hundred thirty four million five hundred sixty seven thousand eight hundred and ninety.

Let us now look at some examples to understand this concept better.

Example 1:

Write 39784012 in words using both the Indian and the International number system.

Solution:

In the Indian number system, the number can be written according to the place value of each digit as follows.

Crore	Ten lakh	Lakh	Ten thousand	Thousand	Hundred	Ten	One
3	9	7	8	4	0	1	2

Therefore, the number can be written as three crore ninety seven lakh eighty four thousand and twelve.

In the International number system, the number can be written according to the place value of each digit as follows.

Ten million	Million	Hundred thousand	Ten thousand	Thousand	Hundred	Ten	One
3	9	7	8	4	0	1	2

Therefore, the number can be written as thirty nine million seven hundred eighty four thousand and twelve.

Example 2:

Insert commas between the numbers according to both the Indian and the International number system.

(a) 88500784 (b) 32098175

Solution:

(a) According to the Indian number system, the number will be written as

8,85,00,784.

According to the International number system, the number will be written as

88,500,784.

(b) According to the Indian number system, the number will be written as

3,20,98,175.

According to the International number system, the number will be written as

32,098,175.

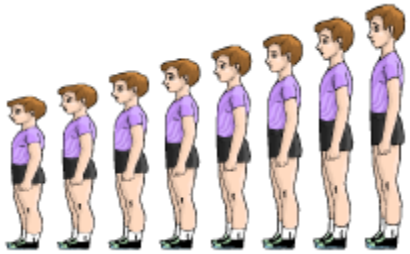
Comparing and Ordering Numbers

With the help of numbers, we can count living and non-living objects. For example, number of chocolates, number of marbles, number of birds, etc. Numbers help us to identify which collection of objects is bigger and arrange them in order.

We must note that the number should not start with zero. If the number starts with zero, then remove the zero and follow the steps because a number cannot begin with zero.

Now, when you stand in a line for the morning assembly in your school, you must have observed that you often stand according to your heights. The taller students stand at the back of the line and the shorter ones in the front. This is nothing but standing in

the line in increasing order of your heights. On the contrary, if one starts counting from the back, then you are standing in decreasing order of your heights.



Therefore, there are two ways of arrangement of numbers (objects).

1. **Ascending order:** The arrangement of numbers from the **smallest to the greatest** is known as ascending order. Ascending order means in increasing order.

   For example, if we have to write the numbers 81, 18, 26, and 47 in ascending order, then they will be written as 18, 26, 47, and 81.

2. **Descending order:** The arrangement of numbers from the **greatest to the smallest** is known as descending order. Descending order means in decreasing order.

   For example, if we have to write the numbers 54, 12, 98, and 4 in descending order, then they will be written as 98, 54, 12, 4.

   Ascending and descending orders are reverse of each other.

   Now, let us solve some examples to understand this topic better.

   Example 1:

   Which number is greater, 426 or 4378?

   Solution:

   The first number is a three-digit number and the second number is a four-digit number. Therefore, 4378 is greater than 426.

   Example 2:

   Find the greatest and the smallest number among the following numbers.

   1018, 1081, 1801, 1011, 1065

Solution:

Here, all the given numbers are four-digit numbers. First digit is same for all the numbers. Second digit from the left is the greatest in third number (which is 8). Therefore, 1801 is the greatest number.

The third digit is same in the first and fourth numbers (which is 1), while the second and fifth numbers have 8 and 6 as their third digit. Among 1018 and 1011, the fourth digit is smaller for the latter number. Therefore, 1011 is the smallest number.

Example 3:

Arrange the following numbers in ascending and descending order.

1253, 7876, 1982, 1574

Solution:

Ascending order means the arrangement of numbers from the smallest to the greatest.

Therefore, the above numbers in ascending order are 1253, 1574, 1982, and 7876.

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

Therefore, the above numbers in descending order are 7876, 1982, 1574, and 1253.

Example 4:

The weights of five students are given in the following table. Arrange the students in the increasing order of their weights.

Name of student	**Rahul**	**Pinky**	**Akshay**	**Sonali**	**Gaurav**
Weight (in kg)	**25**	**28**	**19**	**23**	**30**

Solution:

The weights of the students in increasing order are as follows.

19	23	25	28	30
Akshay	Sonali	Rahul	Pinky	Gaurav

Example 5:

Which number is greatest among 92641, 561392, and 560498?

Solution:

The first number is a five-digit number and the rest two numbers are each six-digit numbers. Therefore, 561392 and 560498 are greater than 92641. Both 561392 and 560498 are six-digit numbers and their first two digits from the left are equal (i.e., 5 and 6). The third digits from the left of these numbers are 1 and 0.

Since 1 > 0, 561392 > 560498

Therefore, 561392 is greatest among the given numbers.

Formation of Numbers from Given Digits

A number is a combination of digits and interestingly, we can form various numbers by combining the same set of digits differently.

Let us now look at some examples to understand this concept better.

Example 1:

What will be the greatest and the smallest five-digit number that can be formed using the digits 5, 7, 0, 2, and 9 without repetition?

Solution:

If we arrange the numbers in descending order, then we will obtain the greatest number. Therefore, the greatest number using the given digits is 97520.

If we arrange the numbers in ascending order, then we will obtain the smallest number. Therefore, the smallest number is 20579 (since a number cannot begin with 0, it cannot be placed at the first place).

Example 2:

Write the greatest and the smallest four-digit number.

Solution:

The greatest four-digit number should contain the maximum number of nines (as 9 is the largest digit among the numbers 0 - 9).

Therefore, the greatest four-digit number is 9999.

The smallest four-digit number should contain the maximum number of zeroes. However, we cannot put zero at the first place from the left. Therefore, 1 should come at the first place followed by three zeroes.

Therefore, the smallest four-digit number is 1000.

Example 3:

Form the greatest and the smallest four-digit number using the digits 9, 3, 8, and 1 without repetition, such that 1 is at the third place of the number.

Solution:

If we arrange the digits in descending order, then we will obtain the digits in the order 9, 8, 3, 1 and if we arrange the digits in ascending order, then we will obtain the digits in the order 1, 3, 8, 9.

Now, we have to form the greatest and the smallest four-digit number using these numbers such that they have 1 at their third place.

Therefore, the greatest number is 9813 and the smallest number is 3819.

Example 4:

What will be the greatest and the smallest seven-digit number that can be formed using the digits 4, 7, 0, and 2 so that all of these digits appear at least once?

Solution:

If we arrange the given numbers in descending order, then we obtain $7 > 4 > 2 > 0$; and if we arrange these numbers in descending order, then we obtain $0 < 2 < 4 < 7$.

The greatest and the smallest seven-digit numbers using these numbers so that all of these digits appear at least once are 7777420 and 2000047.

Mathematical Operations On Large Numbers Including Conversion O

Sonia goes to a shop and asks for 10,000 grams of potatoes. The shopkeeper tells her to tell the quantity she wants in kilograms because it is very difficult for him to weigh that many grams.

Can you tell how many kilograms of potatoes does Sonia want?

For this, we will first learn the various units of measurement and their appropriate usages.

If we have to measure the length of a pen, then we use centimetre as the unit of measurement. However, if we have to measure the length of a pole, then centimetre will be a smaller unit of measurement. Hence, we will use metre for measuring the length of the pole.

Similarly, we will use kilometre for measuring larger distances such as the distance between two cities.

In the same manner, kilogram, gram, and milligram are used for weighing items of different weights, whereas kilolitre, litre, and millilitre are used for measuring the capacities of containers of different sizes.

Let us see some conversions of unit.

1 centimetre = 10 millimetres

1 metre = 100 centimetres

1 kilometre = 1000 metres

We can convert the units of weight and capacity in the same manner.

For weight

1 kilogram = 1000 grams

1 gram = 100 centigrams

1 centigram = 10 milligrams

For capacity

1 kilolitre = 1000 litres

1 litre = 100 centilitres

1 centilitre = 10 millilitres

Now, we know that 1 kilogram = 1000 grams, i.e. 1000 grams is equivalent to 1 kilogram.

Thus, Sonia should have asked for 10 kg of potatoes instead of 10,000 grams of potatoes.

Let us now look at some examples to understand the concept better.

Example 1:

Convert 2 kilometres into metres.

Solution:

We know that, 1 kilometre = 1000 metres

∴ 2 kilometres = (2 × 1000) metres

= 2000 metres

Example 2:

How many grams are there in 50,000 centigrams?

Solution:

We know that, 1 gram = 100 centigrams

∴ 50,000 centigrams = (50,000 ÷ 100) grams

= 500 grams

Example 3:

Isha has a 2 m long ribbon. If she cuts 1 m and 25 cm off it, then what is the length of the remaining ribbon?

Solution:

Initial length of the ribbon = 2 m

= 200 cm (1 m = 100 cm**)**

Length of the ribbon cut by Isha = 1 metre and 25 cm

= 100 cm + 25 cm

= 125 cm

Length of the remaining ribbon = (200 – 125) cm

= 75 cm

Example 4:

Gagan bought 2 kg potatoes, 2500 gm carrots, and 4 packets of peas, each packet containing 550 gm peas. What is the total weight of the vegetables bought by him?

Solution:

Weight of potatoes = 2 kg

Weight of carrots = 2500 gm = 2.5 kg

Weight of peas = 4 ×550 gm

= 2200 gm

= 2.2 kg

∴ Total weight of vegetables = 2 + 2.5 + 2.2

= 6.70 kg or 6 kg and 700 gm

Example 5:

If 16 kg and 200 g of rice can be packed in one bag, then how many bags will be required to pack 405 kg of rice?

Solution:

We know that 1 kg = 1000 g

405 kg = $^{405 \times 1000}$ g

= 4,05,000 g

16 kg and 200 g = 16 kg + 200 g

= 16 × 1000 g + 200 g

= 16,200 g

16 kg and 200 g of rice can be packed in 1 bag.

Number of bags required to pack 405 kg of rice = 4,05,000 ÷ 16,200

= $\frac{4,05,000}{16,200} = 25$

Therefore, 25 bags are required to pack 405 kg of rice.

Estimation of Numbers to Given Place Values

Many a times, instead of reporting an exact figure, an approximate value of the actual figure is used. This is called rounding off and is an important concept.

An important point to note regarding rounding off numbers is that the number 5 (which is equidistant from 0 and 10) is rounded off to 10.

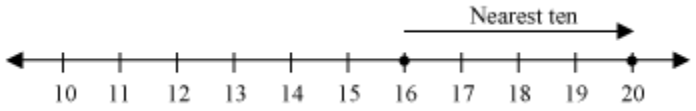
Similarly, while rounding off to the nearest hundreds, 1250 (which is equidistant from 1200 and 1300) is rounded off to 1300.

Let us now look at some more examples to understand this concept better.

Example 1:

Radhika has 16 pencils in her pencil box. Round off the number of pencils to the nearest tens. Plot the number on the number line.

Solution:



It can be seen that 16 is closer to 20. Therefore, 16 is rounded off to 20.

Example 2:

Round off 234 to the nearest ten.

Solution:

The number 234 lies between 230 and 240. However, 234 is closer to 230.

Therefore, 234 is rounded off to 230.

Example 3:

Estimate 4504 by rounding off to the nearest thousand.

Solution:

4000 and 5000 are two multiples of thousand between which the given number lies. Now, 4504 is closer to 5000. Therefore, the rounded off value of 4504 is 5000.

Example 4:

Estimate 7896 by rounding off to the nearest hundred.
Solution:

7800 and 7900 are the two multiples of hundred between which the number 7896 lies, but 7900 is closer to 7896. Therefore, the rounded off value of 7896 is 7900.

Example 5:

In the given table, some numbers and their rounded forms are given. Find out whether the given rounded forms are correct or not.

Given number	Approximate to nearest	Rounded form
7893	**Tens**	**7890**
527	**Thousands**	**500**
62987	**Hundreds**	**63000**
4213	**Tens**	**4200**
90909	**Thousands**	**90000**

Solution:

(i)7893 lies between 7890 and 7900. However, it is closer to 7890. Thus, the rounded form should be 7890. Therefore, the given rounded form is correct.

(ii) 527 lies between 0 and 1000. It is closer to 1000. Thus, the rounded form should be 1000. Therefore, the given rounded form is incorrect.

(iii) 62987 lies between 62900 and 63000. The given number is closer to 63000. Thus, the rounded form should be 63000. Therefore, the given rounded form is correct.

(iv)4213 lies between 4210 and 4220. However, it is closer to 4210. Thus, the rounded form should be 4210. Therefore, the given rounded form is incorrect.

(v)90909 lies between 90000 and 91000. It is closer to 91000. Thus, the rounded form should be 91000. Therefore, the given rounded form is incorrect.

Estimation Strategies to Add, Subtract and Multiply Numbers

The estimation of numbers proves quite useful in real life.

Suppose we want to purchase some clothes from the market. Before leaving home, we find a rough estimate of the amount we require to spend on the clothes and take that much money with us. But how will we estimate the amount we have to carry?

Here, we will learn some estimation strategies to make our calculations easier.

When we estimate a number, we should have an idea of the place value to which we are going to round off the number.

In case of addition or subtraction, we first round off the numbers and then the numbers are added or subtracted.

For example, let us estimate the sum 4369 + 263.

On rounding off the numbers to the nearest thousands, we obtain

4369 rounds off to 4000	4000
263 rounds off to 0	+0
Estimated sum	4000

However, we can observe that the actual answer is 4632, which is not very close to the estimated sum which is 4000. Therefore, we should estimate the numbers to the nearest hundreds to find a more accurate answer.

On rounding off the numbers to the nearest hundreds, we obtain

4369 rounds off to 4400
263 rounds off to 300

Estimated sum = (4400 + 300)
= 4700.

This is a better estimation as it is closer to the actual sum 4632.

Similarly, we can find the product using estimation strategies.

Here is a general rule for rounding off the product of two or more numbers.

First round off each factor of the product to its greatest place value, and then multiply the rounded off values.

For example, let us estimate the product 248 × 63.

Here, 248 would be rounded off to the nearest hundred (200) and 63 to the nearest tens (60).

248 rounds off to 200	200
63 rounds off to 60	×60
Estimated product	12000

Therefore, the estimation of 248 × 63 is 12000.

To get a more reasonable estimate, we try rounding off 63 to the nearest tens, i.e. 60, and 248 to the nearest tens, i.e. 250. We will get the answer as 250 × 60 = 15000 which is the more accurate estimation.

Let us now solve some more examples.

Example 1:

The marks of a student in five subjects are 98, 62, 59, 87, and 93. Find his total marks using estimation strategies.

Solution:

Rounding off the numbers to the nearest tens,

98 rounds off to 100

62 rounds off to 60

59 rounds off to 60

87 rounds off to 90

93 rounds off to 90

The estimated sum comes out to be 400. Therefore, the total marks of the student are 400.

Example 2:

If a bicycle manufacturing company produced 4873 bicycles in the last two years (2006 and 2007) and if 2209 bicycles were produced in the last year (2007), then find the estimated number of bicycles produced by the company in the year 2006.

Solution:

Estimated number of bicycles produced in two years (2006 and 2007) = 4900

(Rounding off 4873 to nearest hundred)

Estimated number of bicycles produced in the year 2007 = 2200

(Rounding off 2209 to nearest hundred)

Therefore, estimated number of bicycles produced in the year 2006 = 4900 – 2200

= 2700

Example 3:

Harry has Rs 400 with him. He wants to buy 17 bats which cost Rs 33 each. Will he be able to buy the bats?

Solution:

On rounding off the numbers 17 and 33, we obtain

17 rounds off to 20	20
33 rounds off to 30	×30
Estimated price of bats	Rs 600

But Harry has only Rs 400 with him. Therefore, he cannot buy 17 bats.

Example 4:

Estimate the value of the following expression.

298 + 1902 + 2387 – 567

Solution:

Firstly, we round off the numbers to nearest hundred. Therefore, we obtain

298 rounds off to 300

1902 rounds off to 1900

2387 rounds off to 2400

567 rounds off to 600

Estimated value = 300 + 1900 + 2400 – 600 = 4000

Thus, the estimated value of the given expression is 4000.

Using Brackets to Simplify Problems

Consider the two numbers 20 and 107.

What is the value of the expression 20 × 107?

Let us now solve some more examples to understand this concept better.

Example 1:

Write the expressions for each of the following statements.

1. **Ten is multiplied with the sum of 9 and 3.**
2. **Nine is added to the product of 5 and 2.**
3. **Twice the sum of 4 and 5 is divided by 2.**

Solution:

1. The expression for the given statement is $10 \times (9 + 3)$.
2. The expression for the given statement is $9 + (5 \times 2)$.
3. The expression for the given statement is $\frac{2(4+5)}{2}$.

Example 2:

Write a situation for the expression $3 \times (8 - 5)$ where brackets are necessary.

Solution:

The situation of the given expression can be written as follows.

Sahil bought 8 apples. Out of them, 5 apples were rotten. The cost of one apple was Rs 3. What was the cost of good apples?

Example 3:

4 is multiplied with the difference of 100 and 70. Write the expression for the given statement using brackets and solve that expression.

Solution:

The expression is $4 \times (100 - 70)$.

Now, $4 \times (100 - 70)$

$= 4 \times 30$

$= 120$

Example 4:

Solve the expression 203×207 using brackets.

Solution:

203 × 207

= (200 + 3) × (200 + 7)

= 200 × 200 + 3 × 200 + 200 × 7 + 3 × 7

= 40000 + 600 + 1400 + 21

= 42021

Example 5:

Solve the following expressions.

1. **3 × 7 × (80 + 26 – 61)**
2. $\frac{3(94-56)+2(25+16)+(4\times3)}{2}$

Solution:

1. 3 × 7 × (80 + 26 – 61) = 3 × 7 × (106 – 61)

   = 3 × 7 × (45)

   = 3 × 7 × 45

   = 945

2. $\frac{3(94-56)+2(25+16)+(4\times3)}{2}$

$$=\frac{3(38)+2(41)+12}{2}$$
$$=\frac{114+82+12}{2}$$
$$=\frac{208}{2}$$
$$=104$$

Example 6:

Two friends Ankita and Prerna save Rs 5 and Rs 10 daily. How much money will be saved by them in a week?

Solution:

Money saved by Ankita daily = Rs 5

Money saved by Prerna daily = Rs 10

Number of days in a week = 7

Money saved by them in a week = Rs (5 + 10) × 7

= Rs 15 × 7

= Rs 105

Conversion between Hindu-arabic and Roman Numerals

There are various ways of writing numerals. We use Hindu-Arabic numeral system according to which numerals are written as 1, 2, 3, 4…etc.

Another way of writing numerals is Roman numeral system in which 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 are written as I, II, III, IV, V, VI, VII, VIII, IX, X respectively.

Roman numbers are used in clocks; they are also used in timetable to represent periods in school.

Some standard symbols of Roman numerals are as follows.

I	V	X	L	C	D	M
1	**5**	**10**	**50**	**100**	**500**	**1000**

Now, let us understand the rule to convert Roman numerals into Hindu-Arabic numerals.

(i) When a symbol of Roman numeral system is repeated, its value is added as many times as it is repeated.

For example, XXX = 10 + 10 + 10

= 30

(ii) When we write a symbol of smaller value to the right of a symbol of greater value, the value of the smaller symbol is added to the value of the greater symbol.

For example, XII = 10 + 2 = 12

(iii) If we write a symbol of smaller value to the left of a symbol of greater value, then the value of the smaller symbol is subtracted from the value of the greater symbol.

For example, IX = 10 – 1 = 9

We must remember some points while writing roman numerals.

(i) A symbol can never be repeated more than three times.

For example, 40 is written as XL = 50 – 10 = 40 and not as XXXX.

(ii) The symbols V, L, and D are never repeated.

For example, we cannot write VV, LL, DD to represent numbers like 10, 100, 1000.

(iii) We can subtract I only from V and X.

For example, we cannot write IL or IC to represent 49 or 99 respectively. 49 is represented by XLIX (XL for 40 and IX for 9). Similarly, 99 is represented by XCIX (XC for 90 and IX for 9).

(iv) We can subtract X only from L, M, and C.

For example, we cannot write XD to represent 490. The number is represented by CDXC (CD for 400 and XC for 90).

(v) V, L, and D can never be subtracted from any symbol.

For example, we never write VXX to represent 20 or LCCC to represent 250.

Let us now look at some examples to understand this concept better.

Example 1:

Write the following numbers in Roman numerals.

(a) 29 (b) 45 (c) 67 (d) 540

Solution:

(a) 29 = 20 + 9

= 10 + 10 + 9

$= XX + IX$
$= XXIX$

(b) 45 = 40 + 5

= (50 – 10) + 5

$= XL + V$
$= XLV$

(c) 67 = 60 + 7

$= (50 + 10) + 7$

$= LX + VII$

$= LXVII$

(d) 540 = 500 + 40

$= 500 + (50 - 10)$

$= D + XL$

$= DXL$

Example 2:

Write the following Roman numerals in Hindu-Arabic numerals.

(i) LXXVII (ii) CXCIX (iii) DCLXIV

Solution:

(i) LXXVII = L + XX + VII

= 50 + 20 + 7

= 77

(ii) CXCIX = C + XC + IX

= 100 + 90 + 9

= 199

(iii) DCLXIV = D + C + L + X + IV

= 500 + 100 + 50 + 10 + 4

= 664