

NEW HORIZON SCHOOL

CLASS V

SUPPORT MATERIAL

MATHEMATICS

PERIODIC TEST – 1

CHAPTER – 1

LARGE NUMBERS

❖ Indian and International Place Value Chart

Indian Place Value Chart

Place value tells us the value of each digit in a numeral based on its position. A place value chart helps us to recognize large numbers. We read place value chart from left to right. In Indian system we start grouping the number from right in group of 3 and further in group of 2. The place value chart have been separated into groups called periods i.e. ones, thousands, lakhs and crores.

Crores		Lakhs		Thousands		Ones		
Ten Crores (TC) (10,00,00,000)	Crores (C) (1,00,00,000)	Ten Lakhs (TL) (10,00,000)	Lakhs (L) (1,00,000)	Ten Thousands (TTh) (10,000)	Thousands (Th) (1000)	Hundreds (H) (100)	Tens (T) (10)	Ones (O) (1)

- Let's read this number according to Indian Place Value Chart.

3, 56,245 – Three lakh fifty six thousand two hundred forty five

1, 23, 50,005- One crore twenty three lakh fifty thousand five

International Place Value Chart

The place value that is used in many countries of the world is called International Place Value Chart. To understand the place value of each digit, we put the number in place value chart so that we can identify each digit. In International system we start grouping the number from right in group of 3, called period and we put comma or space after each period to make the number easily readable.

Millions			Thousands			Ones		
Hundred Millions (HM) (100,000,000)	Ten Millions (TM) (10,000,000)	Millions (M) (1,000,000)	Hundred Thousands (HTh) (100,000)	Ten Thousands (TTh) (10,000)	Thousands (Th) (1,000)	Hundreds (H) (100)	Tens (T) (10)	Ones (O) (1)

- Let's read this number according to International Place Value Chart.

37,987,450 – Thirty seven million nine hundred eighty seven thousand four hundred fifty

100,000,150- One hundred million one hundred fifty

Let's compare the two number systems

Crores		Lakhs		Thousands		Ones		
Ten Crores (TC) (10,00,00,000)	Crores (C) (1,00,00,000)	Ten Lakhs (TL) (10,00,000)	Lakhs (L) (1,00,000)	Ten Thousands (TTh) (10,000)	Thousands (Th) (1000)	Hundreds (H) (100)	Tens (T) (10)	Ones (O) (1)
Millions				Thousands			Ones	
Hundred Millions (HM) (100,000,000)	Ten Millions (TM) (10,000,000)	Millions (M) (1,000,000)	Hundred Thousands (HTh) (100,000)	Ten Thousands (TTh) (10,000)	Thousands (Th) (1,000)	Hundreds (H) (100)	Tens (T) (10)	Ones (O) (1)

- From above comparison we observe that

100 thousands = 1 lakh

1 million = 10 lakhs

10 millions = 1 crore

100 millions= 10 crores

❖ **Place Value and Face Value**

Place value of the digit is the product of the face value of the digit and the value of its place whereas face value of a digit is the digit itself.

- Let's find the face value and place value of 6 in 6, 45,100

Face Value is digit itself so face value of 6 in 6, 45,100 is '6'

Place Value of the digit is product of the face value of the digit and the value of its place so, place value of 6 in 6,45,100 is $6 \times 1,00,000 = 6,00,000$ (6 Lakh)

❖ **Expanded Notation**

In expanded form, we expand each digit of a number to its place value.

Let's see expanded notation of the number 29,123

This can be expanded in three different ways:

- 2 ten thousands +9 thousands + 1 hundred + 2 tens + 3 ones
- $(2 \times 10,000) + (9 \times 1,000) + (1 \times 100) + (2 \times 10) + (3 \times 1)$
- $20000 + 9000 + 100 + 20 + 3$

Standard form of $60000+4000+40+6$ is 64,046

❖ **SUCCESSOR**-To get the successor of a number add 1 to it.

❖ **PREDECESSOR**- To get the predecessor of a number subtract 1 from it

❖ **Rounding Off Large Numbers/ Rounding Off Whole Numbers**

Rounding off to the nearest 10

If the digit in the ones place is 0, 1, 2, 3, or 4 (i.e. < 5) then replace ones place by '0'.

Example: 5,817,42**4**  5,817,420 (4<5)

If the digit in the ones place is 5, 6, 7, 8 or 9 (i.e. > 5 or = 5, but < 10), then replace ones digit by '0' and add 1 to the tens place.

Example: 62,75,98**5**  62,75,990 (Here, digit at ones place is = 5)

Rounding off to the nearest 100

If the digit in the tens place is 0, 1, 2, 3, or 4 (i.e. < 5) then replace ones and tens places by '0'.

Example: 5,817,**424**  5,817,400 (2<5)

If the digit in the tens place is 5, 6, 7, 8 or 9 (i.e. > 5 or = 5, but < 10), then replace ones and tens places by '0' and add 1 to the hundreds place.

Example: 62,75,**885**  62,75,900 (8>5)

Rounding off to the nearest 1000

If the digit in the hundred place is 0, 1, 2, 3, or 4 (i.e. < 5) then replace ones, tens and hundred places by '0'.

Example: 5,817,**424**  5,817,000 (4<5)

If the digit in the hundreds place is 5, 6, 7, 8 or 9 (i.e. > 5 or = 5, but < 10), then replace ones, tens and hundred places by '0' and add 1 to the thousands place.

Example: 62,75,**985**  62,76,000 (9>5)

Rounding off to the nearest 10,000

If the digit in the thousands place is 0, 1, 2, 3, or 4 (i.e. < 5) then replace ones, tens, hundred and thousand places by '0'.

Example: 5,81**3,424**  5,810,000 (3<5)

If the digit in the thousands place is 5, 6, 7, 8 or 9 (i.e. > 5 or = 5, but < 10), then replace ones, tens, hundred and thousands places by '0' and add 1 to the ten thousands place.

Example: 62,7**5,985**  62,80,000 (=5)

Rounding off to the nearest 1,00,000

If the digit in the ten thousands place is 0, 1, 2, 3, or 4 (i.e. < 5) then replace ones, tens, hundred, thousand and ten thousand places by '0'.

Example: 58,**13,424**  5,800,000 (1<5)

If the digit in the ten thousands place is 5, 6, 7, 8 or 9 (i.e. > 5 or = 5, but < 10), then replace ones, tens, hundreds, thousands and ten thousands places by '0' and add 1 to the lakh place.

Example: 62,**75,985**  63,00,000 (7>5)

❖ Roman Numerals

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

There are a few rules for writing numbers with Roman numerals.

- Repeating a numeral up to three times represents addition of the number. For example, III represents $1 + 1 + 1 = 3$. Only I, X, C, and M can be repeated; V, L, and D cannot be, and there is no need to do so.
- Writing numerals that decrease from left to right represents addition of the numbers. For example, LX represents $50 + 10 = 60$ and XVI represents $10 + 5 + 1 = 16$.
- To write a number that otherwise would take repeating of a numeral four or more times, there is a subtraction rule. Writing a smaller numeral to the left of a larger numeral represents subtraction. For example, IV represents $5 - 1 = 4$ and IX represents $10 - 1 = 9$. To avoid ambiguity, the only pairs of numerals that use this subtraction rule are

Roman Numeral	Hindu-Arabic Equivalent
IV	$4 = 5 - 1$
IX	$9 = 10 - 1$
XL	$40 = 50 - 10$
XC	$90 = 100 - 10$
CD	$400 = 500 - 100$
CM	$900 = 1000 - 100$

- To represent larger numbers, a bar over a numeral means to multiply the number by 1000. For example, \bar{D} represents $1000 \times 500 = 500,000$ and \bar{M} represents $1000 \times 1000 = 1,000,000$, one million.

CHAPTER – 2

THE FOUR FUNDAMENTAL OPERATIONS

- ❖ Each number in an addition sum is called an addend.
- ❖ In an addition sum, the order of the addends can be changed, but the sum remains the same.
- ❖ In subtraction, the order of subtrahend and minuend cannot be changed.
- ❖ In multiplication, the order of numbers can be changed, but the product remains the same.
- ❖ The product of any number and zero is zero.
- ❖ Dividing a number by 0 is meaningless.
- ❖ The sum, difference, product and quotient of two numbers can be estimated by rounding off the numbers suitably.
- ❖ Properties of addition:
 - Order property:
 - When the order of the addends is changed, the sum remains the same.
 - Zero property:
 - The sum of zero and the number is the number itself
 - Grouping property:
 - Even if the grouping of addends is changed, the sum remains the same
- ❖ Properties of subtraction:
 - The order of the numbers involved in subtraction cannot be changed.
 - When the number is subtracted from itself, the difference is zero
 - When the minuend and the subtrahend are the same, the difference is zero.
- ❖ Properties of multiplication:
 - The product does not change even if the order changes.
 - The product of any number and 1 is the number itself.
 - The product of a number and zero is zero.
 - Even if the grouping of numbers is changed, the product remains the same.
- ❖ Properties of division:
 - If we divide a number by 1, the quotient is the number itself.
 - If we divide a number by itself, the quotient is 1.
 - If we divide 0 by a number, the quotient is 0.
 - Dividing a number by 0 is meaningless.

❖ Problem solving skills:

- Read the question carefully
- Understand the question thoroughly
- Find the facts given in the question.
- Make a mental picture of the question.
- Solve the question step by step.
- Check your answer