Lesson-1

Structure of Numbers

B8P8V3

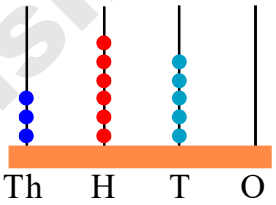
A day at the market

One day Moni went to the market with her mother to buy books, a tiffin box and a school bag. Moni's mother had Rs. 3650 with her. Moni bought books for Rs. 1270. She bought a tiffin box and a school bag for Rs. 805 for her brother and sister.

Write the amount of money and show the amount in the abacus.

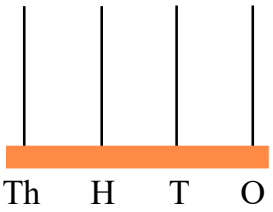
Amount of money Moni's mother had

Thousands	Hundreds	Tens	Ones
3	6	5	0



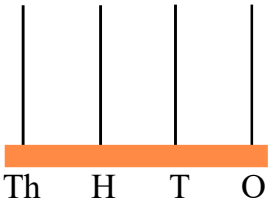
Amount of money spent for books

Thousands	Hundreds	Tens	Ones



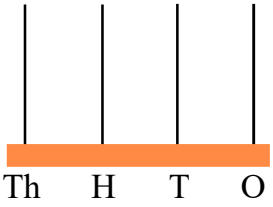
Amount of money spent for school bag and tiffin box

Thousands	Hundreds	Tens	Ones



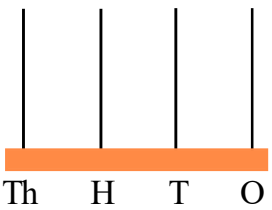
Total amount of money spent

Thousands	Hundreds	Tens	Ones



Remaining amount of money

Thousands	Hundreds	Tens	Ones



1. Write the following numbers in words.

(a) 3102 .....

(b) 4300 .....

(c) 1266 .....

(d) 29,008 .....

(e) 15,927 .....

2. Write in numbers

(a) Three thousand two hundred forty five

(b) Twelve thousand seven hundred eighty

(c) Twenty five thousand three hundred four

(d) One lakh thirty four thousand seven hundred four

3. Write the largest and the smallest number from the following.

(a) 7372, 4927, 317, 69875, 650 , 600

The largest number	The smallest number

(b) 2853, 8691, 9999, 13001, 123,600

The largest number	The smallest number

4. Write the largest and smallest number formed by the digits 7, 8, 3, 5

The largest number ____ The smallest number ____

5. Write the largest and the smallest four digit number from the digits 2, 8 and 5 using any of the digits more than once.

The largest number ____ The smallest number ____

6. Write the largest and the smallest five digits number from the digits 3, 7, 0 and 5 using any of the digit more than once.

The largest number ☐ The smallest number ☐

7. Write the following numbers in ascending order.

96,259; 20,635; 96,025; 87,562; 70,025

8. Write the following numbers in descending order.

50,000; 74,002; 78,162; 85,715; 60,035

9. Write the following numbers in expanded form.

(a) 3520 (b) 2222 (c) 2098

(d) 98,810 (e) 65,006 (f) 99,999

10. Write the place value of the following under lined digits.

(a) 914<u>6</u> (b) 43<u>6</u>2 (c) 7<u>4</u>05

(d) 565<u>1</u> (e) <u>6</u>065 (f) 7<u>0</u>50

(g) <u>9</u>209 (h) 2<u>4</u>652 (i) 86,70<u>2</u>

(j) 3<u>0</u>,725 (k) <u>5</u> <u>8</u>982 (l) <u>7</u><u>9</u>012

Try yourself

1. Write the place value of 8 and 5 from the number 58,972.
2. Write the number 99,999 in expanded form.
3. Write the number **80,029** in words.

Let us Know

The largest four digits number is 9999, If we add one with it we get the smallest five digits number

That is, 9999 +1= 10,000

Largest five digit number is 99999; if we add one with it we get the smallest 6-digit number.

That is, 99999 +1= 100000

Here the number is 100000; if we write the number in Indian system of Numeration it will be 1,00,000 and we read it as **One Lakh.**

Example :

Number	Lakhs	Ten thousands	Thousands	Hundreds	Ten	Ones
4,57,628	4	5	7	6	2	8
5,34,216	5	3	4	2	1	6
4,37,592	4	3	7	5	9	2

We read the number 4,57,628 as 4 lakh 57 thousands 6 hundred twenty eight.
Try to read remaining two numbers from the table.

Let us know

Introducing 10,00,000 :

The largest 6-digit number is 999999. Adding 1 to this which number do you get?

999999+1= 1000000, it is the smallest 7-digit number.

The number is called ten lakh. In Indian system of Numeration we write it as 10,00,000

Try these

1. Write the following numbers in expanded form

   4,57,628 = 4×100000 +5 ×10000 + 7 ×1000 + 6×100 + 2×10 +8 ×1

   5,48,393 = ...

   3,740,156 = ...

2. Write the following numbers in Indian System of Numeration.

Number	Ten Lakhs	Lakhs	Ten thousand	Thousand	Hundreds	Ten	Ones
72,34,560	7	2	3	4	5	6	0
62,31,315							
86,45,234							

3. Fill the entries in the blanks left

Number	Ten Lakhs	Lakhs	Ten Th	Th	H	T	O	Number name	Expansion
8,25,431	–	8	2	5	4	3	1	Eight lakh twenty five thousand four hundred thirty one	**8** ×1,00,000 + **2**×10,000 + **5**×1,000 + **4**×100 + **3**×10 + **1**×1
51,76,432	5	1	7	6	4	3	2	.....	

4. What are the place values of 7, 9 and 0 in the number 7, 91, 207.

5. Write the number name of 6, 42, 039 in words.

6. Write the expanded form of 39, 40, 444

7. Write the place value of 8, 6, 7 of the number 86, 47, 903 and write its number name.

8. Write 74, 09, 777 in expanded form.

Introducing 1,00,00,000

The largest 7-digit number 9999999, Adding 1 to this we get the smallest 8-digit number

That is, 9999999 + 1 = 10000000

The number is called **One Crore**. In Indian system of numeration we write it as **1,00,00,000**

(Let us include numbers upto crore as shown below)

Number	Crores	Ten Lakhs	Lakhs	Ten Th	Th	Hun	Tens	Ones	Number Name
8,90,20,120	8	9	0	2	0	1	2	0	Eight crore ninety lakh twenty thousand one hundred twenty.
7,53,07,608									

Let us do

1. 1. Write tho following numbers in the expanded form

   (i) 8,90,20,120 = 8×10000000+9×1000000+0×100000+2×10000+ 0×1000 +1×100+2×10+0×1

   (ii) 5,05,53,624 = ...

   (iii) 6,84,65,804 = ...

   (iv) 4,30,26,532 = ...

2. Write the number name of 8, 05, 64, 021.

3. Write the place value of 5, 9 and 2 for the number 5,93,20,067

4. Complete the following

10 –1 = ...

100 –1 = ...

1000 –1 = ...

10000 –1 = ...

100000 –1 = ...

1000000 –1 = ...

10000000 –1 = ...

100000000 –1 = ...

Place Value :

Let us recall the place vlaue chart upto ten thousand.

Thousands		Ones		
Ten Thousand	Thousand	Hundred	Ten	One
10000 Five digits	1000 Four digits	100 Three digits	10 Two digits	1 One digit

Let us know

Indian System of Numeration

Crores		Lakhs		Thousands		Ones		
Ten Crore	One Crore	Ten Lakh	Lakh	Ten Thousand	Thousand	Hundred	Ten	One
100000000 9digits	10000000 8digits	1000000 7digits	100000 6digits	10000 5digits	1000 4digits	100 3digits	10 2digits	1 1digits

International System of Numeration

Billion			Million			Thousnads			Ones		
Hundred Billions	Ten Billions	Billions	Hundred Millions	Ten Millions	Millions	Hundred Thousand	Ten Thousands	Thousands	Hundreds	Tens	Ones
100000000000	10000000000	1000000000	100000000	10000000	1000000	100000	10000	1000	100	10	1

Let us know

In International system of Numeration, Billion is used for the numbers which are greater than Million.

1 Billion = 1000 Millions

Do you know?

How many lakhs make one million?

How many millions make one crore?

Let us see what we get after comparing the two charts of both the systems.

10 lakhs = 10,00,000 = 1,000,000 = 1 Million

1000 Millions = 1 Billions

100 Thousands = 100,000 = 1,00,000 = 1 lakh

Hundred crores = 1 Billion

One crore = 10000000 = 10 Millions

Use of Commas

While writing large numbers we use commas (,). In Indian system of Numeration we use ones, tens, hundreds, thousands and then lakhs and crores. Commas are used to mark thousands, lakhs and crores. The first comma comes after hundreds place (three digits from the right) and marks thousands. The second comma comes two digits later (five digits from the right). It comes after ten thousands place and marks lakh. The third comma comes after another two digits (seven digits from the right). It comes after ten lakh place and marks crore. (while writing number names we donot use commas)In the International system of Numeration we have ones, tens, hundreds. thousands and ten millions. It comes after every three digits from the right. The first comma marks thousands and the next comma marks millions.

Example 1. Write the number using commas in both Indian as well as International systems of Numeration 82540324

In Indian system of Numeration : 8, 25, 40, 324.

The number name is : Eight crores twenty five lakhs forty thousands three hundred twenty four.

In International System of Numeration : 82,540,324

The numbername is : Eighty two millions five hundred forty thousands three hundred twenty four.

Example 2. Write the place value of 2 and 5 for the number 72045389 in both Indian and International System of Numeration.

In Indian System of Numeration : 7,20,45,389

Place value of 2 is 2 ten lakhs $= 2 \times 10,00,000 = 20,00,000$

Place value of 5 is 5 thousands $= 5 \times 1,000 = 5,000$

In International System of Numeration : 72,045,389

Place value of 2 is 2 million $= 2 \times 1,000,000 = 2,000,000$

Place value of 5 is 5 thousand $= 5 \times 1,000 = 5,000$

Do it yourself

(a) Write in numbers by inserting commas (,) suitably.

(i) Seventy five lakh sixty nine thousand three hundred seven

(ii) Nine crore eleven lakh twenty one thousand two hundred two.

(iii) Fifty million eight hundred one thousand five hundred ninety two.

(iv) Fifty eight million twenty six thousand two hundred two.

(b) Insert commas suitably according to Indian System of Numeration-

(i) 97057201 (ii) 99990046 (iii) 98423107

(c) Insert commas suitably according to Indian System of Numeration-

(i) 79821902 (ii) 99958102 (iii) 48094381

(d) Write appropriate numbers in the blank space given below-

1,00,000 = _____ Ten Thousand = _____ Hu = _____ Tens

94,35,992 = _____+ _____ + _____ + _____+ ___+ ___+ ____

(e) Write the expanded forms-

(i) 2,76,36,708 (ii) 54,30,36,706

(f) Write the place value of the underlined digits given below in both Indian and International numeration system.

(i) 8 7 4 5 6 2 1 0 (ii) 7 8 9 9 9 9 (iii) 6 0 2 0 0 5 4 7

(g) Insert commas (,) suitably in the numbers (Indian and International system)

42613287 3000090 4654489 1145275

(h) How many digits are there in 10 crores?

(i) What is the place value of 10 lakh in International System?

(j) Population of a city is 11528735. Out of them 1357632 are service holders and remaining are businessmen. How many people of the city are businessmen?

(k) Cost of a bicycle is Rs. 5,300. What is the cost of 20 such bicycles?

(l) Cost of one box of tea leaves is Rs. 5,000. What is the cost of 100 such boxes? Write the total cost in Indian System on Numeration.

(m) If the expenses of a person for a tour to Europe is Rs. 2,50,000 then what will be the total expenditure for a group of 5 persons. Write the total expenditure in Internationl System of Numeration.

Estimation :

If we are asked about the total population of our district, we will not be able to tell the exact number. The answer would be approximately 25 thousands or approximately 3 lakhs. So, it is seen that in some situations without refering to the exact number we consider some estimated value. It helps us answer to the nearest value. This value is estimated value and the process is called Estimation.

For example :

- Approximately 2000 people went to the bihu function
- Approximately 400 people came to the fair.

1. Estimating to the nearest tens by rounding off :

Figure-1

In figure 1, number 5 is equidistant from both 0 and 10.

For estimation,

We can ignore the number which is less than 5, that is we round them off to '0'

Again, we 'estimate' (round the numbers off) the numbers which are equal to 5 or greater than 5 but less than 10 as 10

So, 1, 2, 3, 4 $\xrightarrow{\text{estimated}}$ 0

and 5, 6, 7, 8, 9, 10 $\xrightarrow{\text{estimated}}$ 10

2. Estimating to the nearest **hundreds** by rounding off

If we are to estimate to the nearest 100 by rounding off then we can consider the number on the number line shown below-

Figure-2

In this figure 50 is equidistant form both 0 and 100 .

So, the numbers less than 50 is estimated (rounded off) to 00 (consisting of two digits) again, the numbers equal to 50 or greater than 50 but less than 100 is estimated to 100 (consisting of 3-digits).

3. Similarly, if we estimate to the nearset 1000 then let us observe the number line shown below-

Figure- 3

In this figure 500 is equidistant from both 000 and1000.

So, the numbers less than 500 is estimated to 0 and the numbers equal to or greater than 500 but less than 1000 is estimated to 1000.

(i) **Round off 8 to the nearest tens-**

5 < 8, so 8 is rounded off to 10

(ii) **Round off 22 to the nearest hundreds-**

22 < 50, so 22 is rounded off to 00

(iii) **Round off 89 to the nearest hundreds-**

50 < 89, so 89 is rounded off to 100

(iv) **Estimation of 893 nearest to the different units**

893 = 800 + 90 +3

According to the figure 1, 3<5, so 3 is rounded off to 0

Now 893 = 800 +90 that is 893 is round off to 890 estimating nearest to tens

According to the figure 2, 50<90, so 90 is rounded off to 100

so, 893= 800 + 100 = 900 that is 893 is rounded off to 900 estimating nearest to hundreds.

According to figure 3, 500<900, So 900 is rounded off to1000 estimating nearest to thousnads.

Let us remember easily :

(i) In 22, 2 is estimated to 0, so 22 ⟶ 20

(ii) In 89, 9 is estimated to 10, so 89 ⟶ 80+10 =90

(iii) In 893, 93 is estimated to 100, so 890 ⟶ 800 + 100 = 900

(iv) In 8935, 935 is estimated to 1000, so 8935 ⟶ 8000 + 1000 = 9000

Let us estimate the sum

628 + 15820 (estimated to hundreds)

Firstly, in 628, 28 $\rightarrow$ 00 So, 628 $\rightarrow$ 600 + 00 = 600

In 15820, 20 $\rightarrow$ 00 So, 15820 $\rightarrow$ 15800 + 00 = 15800

So, the estimated sum is 600 + 15800 = 16400

actual sum is 628+15820 = 16448

Approximate value :

Example 1: To find the approximate value of 178 estimating to the nearest hundreds.

Solution: 178 = 100 + 78

50 < 78, So, 78 $\rightarrow$ 100

$\therefore$ Required approximate value of 178 = 100 + 100 = 200

Example 2 : To find the approximate value of 223 estimating to the nearest hundreds.

Solution : 223 = 200 + 23

23 < 50, So, 23 $\rightarrow$ 00

$\therefore$ 223 Required approximate value of = 200 + 00 = 200

Example 3 : To find the approximate value of 4973 estimating to the nearest hundreds.

Solution : 4973 = 4900 + 73

50 < 73, So, 73 $\rightarrow$ 100

$\therefore$ Required approximate value of = 4900 + 100 = 5000

Example 4 : To find the approximate value of 3209 estimating to the nearest hundreds.

Solution : 3209 = 3200 + 9

9 < 50, So, 9 $\rightarrow$ 00

$\therefore$ Required approximate value of = 3200 + 00 = 3200

Example 5 : To find the approximate value of 2560 estimating to the nearest thousands.

Solution : 2560 = 2000 + 560

500 < 560, So, 560 $\rightarrow$ 1000

$\therefore$ Required approximate value of = 2000 + 1000 = 3000

Example 5 : To find the approximate values of the following, estimating to the nearest thousands

15318, 14892, 16489

Solution :

From the figure it is clear that, for 15318, 318<500, So, 318 → 000

So, the approximate value of **15318** nearest to the thousands =15000 + 000 = 15000

for **14892**, 892>500 So, 892 → 1000

So, the approximate value of **14892** nearest to the thousand =14000 + 1000 = 15000

Again, for **16489,** 489<500, So, 489 → 000

So, the approximate value of **16489** nearest to the thousands = 16000 + 000 = 16000

Example 7 : Find the approximate value of 3289 nearest to tens/hundred/thousands

Solution : For estimating to the nearest tens

3289 = 3280 + 9, 5 < 9, 9 → 10

So, the required approximate value nearest to the tens = 3280 +10 =3290

For estimating to the nearest hundreds.

3289 = 3200 + 89, 50 < 89, 89 → 100

So, the required approximate value nearest to the hundreds 3200 +100 =3300

For estimating to the nearest hundreds.

3289 = 3000 + 289, 289 < 500, 289 → 000

So, the required approximate value of 3289nearest to the hundreds

3000 +000 =3000

Do it yourself

1. Match the following :

Number	Nearest Approximate Value
28 (nearest to tens)	100
99 (nearest to tens)	100
97 (nearest to tens)	3200
243 (nearest to tens)	370
351 (nearest to tens)	30
367 (nearest to tens)	4000
4050 (nearest to hundreds)	240
3222 (nearest to hundreds)	350
49,630 (nearest to thousands)	900
889 (nearest to hundreds)	50,000
2223 (nearest to thousands)	2000

2. Find the value of the following numbers nearest to their tens.

   23, 7, 5, 4, 27, 39, 44, 273, 302, 5432, 1490, 1555

3. Find the value of the following numbers nearest to their hundreds.

   410, 481, 9547, 5650, 4650, 49630, 69999, 799999

4. Find the value of the following numbers nearest to their thousands.

   9562, 53554, 64347, 873412, 8694591

Comparing numbers :

Let us consider two numbers of 4 digits each. To compare them we have to compare the digits of thousands place. The number with bigger digits in thousands place is the greater number. If both the digits of thousands place are equal then we have to compare the digits of hundreds place. If both the digits of hundreds place are equal then we have to compare the digits of tens place. Again if both the digits of tens place are equal, we have to compare the digits of ones place.

Example 1 : Compare the numbers **3872** and **2524**

Solution : Both the numbers have the same number of digits

The digit at the thousands place in 3872 is 3

The digit at the thousnads place in 2572 is 2

As, 3>2

So, 3872 is greater than 2574

Example 2 : Compare the numbers **5432** and **5368**

The digits at the thousands place are same in both is 5, 5 l

So, we move to the digits at the hundreds place

The digit at the hundreds place in 5432 is 4

The digit at the hundred place in 5368 is 3.

So, 4> 3

So, 5432 > 5368 That is 5432 is greater than 5368

Example 3 : Compare the numbers **3874** and **3872.**

Here, the digits at the thousands, hundreds and tens place are same in both.

So, We move to the digits at the ones place for both of them.

As, 4 > 2

$\therefore$ 3874 > 3872

That is, 3874 is greater

Do it yourself

1. Put '>' or '=' or '<' sign in blank boxes.

(i) 38640 [<] 48694 (ii) 20643 [ ] 22000

(iii) 100200 [ ] 300100 (iv) 2000200 [ ] 200002000

(v) 27856145 [ ] 27840561 (vi) 87456210 [ ] 91024562

2. Arrange the following in increasing order.

5245678, 4365710, 2378671, 4638690, 3676532, 4276549

3. Arrange the following in decreasing order.

6478546, 4756435, 2186458, 3653870, 7416543, 4739841

Estimated value according to the situation

Sometimes we need to have some, quick answers according to the situation. For example, when we need to go to market to buy some urgent commodities, also which commodities are require we have to have some quick decisions. In that situation we have to estimate (with some mental calculation) that how much money we have to take with us while going to market that estimation will be the cost of commodities to buy.

To Estimate the sum :

Example 1 : 5280 + 15820

We have to find the sum rounds off to the thousands of the numbers.

5280 rounds off to thousands is 5,000, 15820 rounds off to thousands is 16,000

Estimated sum 16000 + 5000 = 21000

Actual Sum 5280 +15820 = 21100

We have found that estimated sum and actual sum are nearer to each other.

To Estimated difference

7,683 and 6230

7,683 rounds off to thousands = 8,000

6230 ,, ,, ,, ,, = 6,000

∴ estimated difference = 8,000

– 6,000

2,000

Do it yourself :

1. A merchant earns Rs. 33,669 and Rs. 25,784 respectly from his two business in a year. Find his total estimate earning for the year.

33,669 rounds off to thousands = ...

25,784 rounds off to thousands = ...

∴ total earning = ...

2. **Let us find the estimated sum**

(i) 7,380 and 29,786 (ii) 525 and 995 (iii) 1274 and 1896

3. **Let us find the estimated difference**

(i) 38925– 23473 (ii) 875–521 (iii) 697–521

To Estimate Products :

Example 1 : Let us estimate for **218 ×68**

We have to find the approximate value of the highest place of two multipliers.

So, Approximate value of 218 nearest to hundreds = 200

Approximate value of 68 nearest to tens = 70

∴ estimated product = 200×70

= 14,000

Example 2 : Estimate for **479 × 192**

Approximate value of 479 nearest to hundred = 500

Approximate value of 192 nearest to hundred = 200

∴ estimated product = 500×200

= 1,00,000

Estimate the following

1. 5267 + 369 (Round off to tens / hundreds/thousands)
2. 30295 + 4320 (Round off to tens / hundreds/thousands)
3. 8999 + 7025 (Round off to tens / hundreds/thousands)
4. 72 × 13 (Round off to tens)
5. 60 × 21 (Round off to tens)
6. 111 × 11 (Round off to tens)
7. 119 × 29 (Round off to tens)
8. 349 × 59 (Round off to tens / hundreds)

*[**Teachers' note :** Teachers will ask students to frame questions of their own and find the sum, differece and product of those by taking the approximate values of the highest places of the question they form]*

Use of Brackets

Use of brakets allows us to follow the procedure systematically in doing addition, subtraction, multiplication and division.

Example 1 : 105 × 6

105 × 6 = (100 + 5) × 6

= 100 ×6 + 5 × 6

= 600 + 30 = 630

(It is called distributioin of multiplication over addition)

$$26 \times 103 = 26 \times (100 + 3)$$
$$= 26 \times 100 + 26 \times 3$$
$$= 2600 + 78$$
$$= 2678$$

Example 2 : During summer vacation Chumu and Rumu works in their garden for 7 days. Chumu works 4 hours a day and Rumu 5 hours a day. How many hours do both of them work in 7 days?

In one day Chumu works = 4 hours

In one day Rumu works = 5 hours

In one day both of them works = 4 + 5 =9 hours

$\therefore$ They worked 7 day in all

$= (4 + 5) \times 7$ hours

$= 9 \times 7$ hours

$= 63$ hours

Alternatively,

Chumu works in one day = 4 hours

$\therefore$ Chumu works in 7 days $= 4 \times 7$ hours

$= 28$ hours

Again Rumu works in one day = 5 hours

$\therefore$ Rumu works in 7 days $= 5 \times 7$ hours

$= 35$ hours

$\therefore$ total hours both of them worked

$= (4 \times 7 + 5 \times 7)$ hours

$= 28$ hours + 35 hours = 63 hours

This can also be written as (without units)

$= (4 + 5) \times 7 = (4 \times 7 + 5 \times 7)$

This is also known as expansion of bracket.

Example 3 : 305 × 105

Solution :

$$
\begin{aligned}
305 \times 105 &= (300 + 5) \times (100 + 5) \\
&= 300 \times (100 + 5) + 5 \times (100 + 5) \\
&= 300 \times 100 + 300 \times 5 + 5 \times 100 + 5 \times 5 \\
&= 30000 + 1500 + 500 + 25 \\
&= 32025
\end{aligned}
$$

Solve using brackets

(a) 5 × 19 (b) 7 × 108 (c) 16 × 102 (d) 102 × 103

Roman Numerals

So far we have been using the Hindu-Arabic numeral system. There is another system of writing numerals which is the system of Roman numerals.

Hindu-Arabic numerals	Roman numerals
1	I
2	II
3	III
4	IV
5	V
6	VI
7	VII

Hindu-Arabic numerals	Roman numerals
8	VIII
9	IX
10	X
50	L
100	C
500	D
1000	M

The rules for the system are :

(1) A symbol is not repeated more than three times but the symbols V, L, D are never repeated.

(2) If a symbol is repeated, its value is added as many times as it occurs.

For example : III = 1+1+1=3

XX = 10 + 10 =20

(3) If a symbol of smaller value is written to the right of a symbol of greeter value, its value gets added to the value of greater symbol.

For example : VI = 5+1=6

XII = 10 + 1 +1 =12

(4) If a symbol of smaller value is written to the left of a symbol of greater value, its value subtracted from the value of the greater symbol.

For example : IX = 10 – 1= 9

XC = 100 – 10 = 90

(5) The symbole V, L, D are never written to the left of a symbol of greater value, that is VX is not correct. The correct form is XV

(6) The symbol I can be subtracted from V and X only. The symbol X can be subtracted from L, M and C only. The symbol C can be subtracted from D and M only.

(7) If a symbol of smaller value is written in between the symbols of two greater values, its value is subtracted from the value of the greater symbol to the right

For example : XIX = 10 + (10–1) = 10 +9 =19

DIX = 500 + (10–1) = 500 + 9 = 509

(8) If a horizontal line is drawn above the any of the symbol, the value of that symbol is increased by thousand times.

For example : $\overline{V}$ = 5×1000 = 5000

$\overline{XXI}$ = 21×1000 = 21,000

(XXI = 10+10+1= 21)

Try These :

1. Write 49, 91, 206, 587, 1490, 1449, 2019 and 5000 in Roman numerals.
2. Write the following Roman numerals is Hindu-Arabic numerals.

   XXX, XL, LX, LXX, XC, LXV, DCXXXV,

   MCMXII, MDCCCXLVI, LXIX, XCVIII

Let us know :

10 Milli	Metre	1 Centimetre
	Gram	1 Centigram
	Litre	1 Centilitre
10 Centi	Metre	1 Decimetre
	Gram	1 Decigram
	Litre	1 Decilitre
10 Deci	Metre	1 Metre
	Gram	1 Gram
	Litre	1 Litre
10	Metre	1 Dekametre
	Gram	1 Decagram
	Litre	1 Decalitre
10 Deka	Metre	1 Hectometre
	Gram	1 Hectogram
	Litre	1 Hectolitre
10 Hecto	Metre	1 Kilometre
	Gram	1 Kilogram
	Litre	1 Kilolitre

1 Kilometre = 1000 time of 1 metre

∴ 1 kilometre = 1000 metrs

similarly, 1 kilogram = 1000 grams

1 kilolitre = 1000 litres

1000 Millimetre = 1 metre

1000 Millilitre = 1 litre

1000 Milligram = 1 gram

Try These

1. How many millimetres are there in 2 metres?
2. Do 26 centimetres make 260 millimetres?
3. Express 13 kilograms in grams.
4. How many centimetres are there in 9 kilometres?
5. How many centimetres are there in 5 millimetres?

6. Is 1 milligram $= \frac{1}{10}$ centigram?
7. How many metres are there in 2 metres 70 centimetres?
8. 400 metres = ———— kilometre
9. 25 litres = ——— kilolitre
   = ——— millilitre

Exercise :

1. Write the number name of -
   (a) 87595762 (b) 48049831
   (Write in both Indian and International System of Numeration)
2. Write the following numbers in both Indian and International System of Numeration by inserting commas suitably.
   3018982, 82160000, 58042513, 34561897, 6015008
3. According to 2011 census, population of Assam is 31168272. Using comma write this number in Indian System of Numeration appropriately write its number name. what will you write for this number according to International system?
4. Write in numerals-
   (a) Seventy three lakh seventy five thousand three hundred seven.
   (b) Twenty three lakh thirty thousand ten
   (c) Three crore five lakh forty.
   (d) Seven crore forty seven lakh forty seven thousand four hundred forty seven.
   (e) Five hundred sixty one thousand two hundred ninety.
   (f) Six million two hundred eighty eight thousand seven hundred ninety seven.
   (g) One million nine hundred fourteen thousand two hundred nine.
5. In 1991, population of a city was 2, 35, 471 and in 2001, population was increased by 72, 950. What is the total population of that city in 2001?
6. Number of bicycles sold in a state in the year 2002-2003 was 7, 43,000 and in the year 2003-2004. 8,00,100. In which year more bicycles were sold and how many more bicycles were sold?
7. A daily newspaper of a city consists of 12 pages. 11,980 copies of that news paper is printed every day. Find the total number of pages of the newspaper printed every day.
8. There are 75,000 sheets of paper for making note books. 4 pages of the note book can be made from a single piece of paper. Each notebook consists of

200 pages. How many note books can be made from 75,000 sheets of paper?

9. Write the place value of the underlined digits of the following numbers.

   (a) 4<u>5</u>367 (b) 70<u>8</u>453

   (c) 2<u>7</u>6367<u>0</u>8 (d) 6<u>1</u>400<u>1</u>

10. Insert commas suitably according to the Indian System of Numeration and the fill the blank boxes using (>, =, <)

    (a) 124054 ☐ 2140589

    (b) 24456122 ☐ 34547892

    (c) 90000001 ☐ 9000001

    (d) 1111111 ☐ 1111111

11. Write the expanded form of the following-

    (a) 792456 (b) 8000670 (c) 4279

    (d) 5690 (e) 90007000

12. Manisha purchased 12 kilogram 250 grams of sugar, 25 kilogram 750 grams of rice, 2 kilogram salt and 350 grams of cumin (Jeera) from a shop. What is the total weight of the items she purchesed?

13. The capacity of a water tank is 200 kilolitres. On the first day 84 kilolitres 950 litres of water was drained out. How much water remained in the tank? (Express in litre)

14. Find the approximate value of the following to the nearest places mentioned.

    (i) 27, 41, 95, 38, 59, 72, 64, 135, 4931, 51630, 7325114 (nearest to tens)

    (ii) 360, 720, 110, 690, 555, 839, 281, 2457, 6666, 615320 (nearest to hundreds)

    (iii) 8100, 1900, 4500, 9300, 6630, 5295, 4444, 61620 (nearest to thousands)

    (iv) 140000, 770000, 320000, 890000, 435000, 651230, 7325114, 64296045 (nearest to lakhs)

    (v) Approximate value of 7, 34, 21, 846 nearest to its crores.

15. Write 5 numbers between 640 and 740 which can be approximated to 700 nearest to their hundreds.

16. Find the approximate value of 157249 nearest to tens. Then find the approximate value of the new number nearest to thousands. Also find the approximate value of the new number found nearest to lakhs.

17. Write the following numbers in Roman Numerals

(a) 225 (b) 600 (c) 906 (d) 598 (e) 56

(f) 555 (g) 53 (h) 69 (i) 999

18. Write the following Roman Numerals in Hindu Arabic system.

(a) CMXCIV (b) CLXX (c) CDX (d) DCXLIX

(e) CCCXXV (f) DCCCLXXXVIII (g) XLV (h) XXIII

(i) XCVIII (j) CCLVI

19. Express the sum in Indian system of Numeration.

(a) (7296325 + 4173243) + 45639

(b) (7281639 + 568548) + 4251408

(c) 4253798 + 61271037 + 3821570

20. Express the product in Indian System of Numeration.

(i) 6250 × 625 (ii) 40003 × 203

(iii) 39625 × 75 (iv) 48062 × 243

21. Estimate the sums.

(a) 6290 + 19986

(b) 108734 + 47599

(c) 5672 + 536

(d) 439 +334 + 4317

(e) 7245506 + 1068297

(f) 6404759 + 5869422

22. Estimate the difference

(a) 95– 91

(b) 439 – 334

(c) 798 –232

(d) 8325 – 48365

(e) 489348 – 48365

(f) 107634 – 67599

(g) 3638775 – 540060

23. Estimate the products-

(a) 378 ×62

(b) 578 ×61

(c) 7250 × 29

(d) 24725 ×31

(e) 59986 ×245

(f) 360345 × 3456

24. A man bought a piece of land for Rs.1263501 to build a house. He spent some amount of money to build the house. His total expenditure was Rs. 1860257. Find the amount of money he spent for building the house.
25. In a book shop 32307 books were sold in first six months of the year 2011 and 22690 books in next six months. Find the total amount of books sold in 2011? Compare the total number of books with the number of books sold in each six months by approximating their values nearest to thousands.
26. There are 226458 books in your school library. During the first week of the begining of the year 49957 books were borrowed by the students. How many books were left in the library?
    (Compare the number of books by finding their approximate values of nearest to thousands)
27. A motor cycle dealer has 85 motor cycles in his shop. Cost of a motor cycle is Rs. 57690, find the total cost of 85 motor cycles.
28. Cost of a bus ticket from Guwahati to Jorhat is Rs. 403. If the total cost of all the tickets against the seats of the bus is Rs. 24180, find the total number of seats on the bus.
29. A person travelled 13 kilometres by bicycle then 44 kilometres by bus and remaining 5 kilometres on foot to reach his destination. Find the total distance covered by him.
30. A shopkeeper sells 25 kg of rice at the rate of Rs.35 per kg on the first day 40 kg of rice at the rate of Rs.30 per kg on the second day and 30 kg of rice at the rate of Rs. 25 per kg on the three days respectively. Find the total quantity of rice sold during three days along with the rate at which the rice was sold.
    Find the total quantity of rice sold by him in three days with what amount of money?
31. There are 40 students in a school. Find how many litres of milk is required if 250 millilitres of milk is distributed to each of the students.
32. A milkman distributes milk in hotels everyday. In first hotel he distributes13 litres, in second he 15 litres 250 milliliter and in the third one 17 litres 750 millilitres. Find how many litres of milk the milkman distributes everyday.

Answer

1. **In Indian System :** (a) Eight crore seventy five lakh ninety five thousands seven hundred sixty two.

   (b) Four crore eighty lakh forty nine thousand eight hundred thirty one.

   In International system : (a) Eighty seven million five hundred thousand seven hundred sixty two.

   (b) Forty eight million forty nine thousand eight hundred thirty one.

2. **In Indian system :** 30,18,982; 8,21,60,000; 5,80,42,513; 3,45,61,897; 60,15,008

   In International system : 3,018,982; 82,160,000; 58,042,513 34,561,897; 6,015,008

3. **In Indian system :** 3,11,68,272 (Three crore eleven lakh sixty eight thousand two hundred seventy two.)

   In International system : 31,168,272

4. (a) 73,75,307 (b) 23,30,010 (c) 3,05,00040
   (d) 7,47,47,447 (e) 561,290 (f) 6,688,797 (g) 1,914,209

5. 3,08,429 জন

6. In the year 2003–2004, 57100 number more he sold.

7. 143760 pages.

8. 3000 note books.

9. (a) place value of 5 ins 5 thousand = $5 \times 1000 = 5000$

   (b) place value of 8 is 8 thousand = $8 \times 1000 = 8000$

   (c) place value of 0 is 0 tens = $0 \times 10 = 0$

   place value of 7 is 7 ten lakhs = 7 (One million)
   $= 7 \times 1000000$

$= 7000000$

(d) place value of 1 is 1 ones = 1 and

place value of 1 is 1 ten thousand = 1 (One million)

$= 1 \times 10000$

$= 10000$

10. (a) < (b) < (c) > (d) =

11. (a) $792456 = 7 \times 100000 + 9 \times 10000 + 2 \times 1000 + 4 \times 100 + 5 \times 10 + 6 \times 1$

(b) $8000670 = 8 \times 1000000 + 0 \times 100000 + 0 \times 10000 + 0 \times 1000 + 6 \times 100 + 7 \times 10 + 0 \times 1$

(c) $4279 = 4 \times 1000 + 2 \times 100 + 7 \times 10 + 9 \times 1$

(d) $56090 = 5 \times 10000 + 6 \times 1000 + 0 \times 100 + 9 \times 10 + 0 \times 1$

(e) $90007000 = 9 \times 10000000 + 0 \times 1000000 + 0 \times 100000 + 0 \times 10000 + 7 \times 1000 + 0 \times 100 + 0 \times 10 + 0 \times 1$

12. 58 kilograme 350 gram

13. 11505 litre

14. (i) 30, 40, 100, 40, 60, 70, 60, 140, 4030, 51630, 7325110

(ii) 400, 700, 100, 700, 600, 800, 300, 2400, 6700, 615300

(iii) 8000, 2000, 5000, 9000, 7000, 5000, 4000, 6200

(iv) The teacher will help the students to understand and allow the students to do on their own. Then the teacher will check the tasks.

(v) 7,00,00,000

15. The students will write by and themselves the teacher will check.

16. 157250; 157000; 200000

17. (a) CCXXV (b) DC (c) CMVI (d) DXCVII

(e) LVI (f) DLV (g) LIII (h) LXIX (i) CMXCIX

18. (a) 1014 (b) 170 (c) 410 (d) 649 (e) 325

(f) 888 (g) 45 (h) 23 (i) 98 (j) 256

19. (a) 11515207 (b) 3598779 (c) 61703265

20. (i) 39,06,250 (ii) 81,20,609

(iii) 29,71,875 (iv) 1,16,79,066

21. (a) 26000 (b) 150000 (c) 6500 (d) 4700

(e) 8000000 (f) 12000000

22. (a) 10 (b) 100 (c) 600 (d) 7500

(e) 450000 (f) 30000 (g) 3500000

23. (a) 24000 (b) 36000 (c) 210000 (d) 600000

24. Rs. 596756

25. Approximate value is 54700

Actual value is 54993

26. Approximate value left is 176501.

Actual value left is 176500.

27. Rs. 4,903,650

28. 60 number of seats

29. 106 km

30. 95 kg, Rs. 2825

31. 20 litre

32. 46 litre

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