



# Large Numbers

## Eight-Digit and Large Numbers ●

Children, in the previous class we have read till 7-digit numbers in detail. In this chapter, we shall study the 8-digit numbers and the numbers beyond them. We know that :

Largest 5-digit number	→	99999
Largest 6-digit number	→	999999
and Largest 7-digit number	→	9999999

The largest 7-digit number is read as 'ninety nine lakh ninety nine thousand nine hundred ninety nine'.

It we add 1 to it, we get an 8-digit number, i.e.—

$$9999999 + 1 = 10000000$$

This 10000000 is the smallest 8-digit number. It is read as 'One crore'.

The largest 8-digit number is 99999999. It is read as 'Nine crore ninety nine lakh ninety nine thousand nine hundred and ninety nine'. If we add 1 to it, we get a 9-digit number :

$$99999999 + 1 = 100000000$$

Thus, we get the smallest 9-digit number which is read as 'Ten crore'.

### Remember

- ❖ To write the largest number of any number of digits, we repeat 9 the same number of times.
- ❖ To write the smallest number having any number of digits, we write 1 on the left, followed by number of zeros 1 less than the total number of digits in the number. .

## To Read and Write Large Numbers by Using Indian Place Value Chart ●

To read the large numbers easily, we keep them in periods in the Place Value Table.

**Example :** Represent 7568382, 60313752 and 276928315 in the Place Value Table.

**Solution :**

Period ⇒	Crores		Lakhs		Thousands		Ones		
Place ⇒	Ten Crores 10,00,00,000	Crores 1,00,00,000	Ten Lakhs 10,00,000	Lakhs 1,00,000	Ten thousands 10,000	Thousands 1,000	Hundreds 100	Tens 10	Ones 1
			7	5	6	8	3	8	2
		6	0	3	1	3	7	5	2
	2	7	6	9	2	8	3	1	5

Children, this table has been divided into four different periods. From the right, ones, thousands, lakhs and crores respectively.

To read any number, leaving aside the ones period, we read the name of the period along with its digits. The numbers kept in the above Place Value Table are read as follows :

- 75,68,382 → Seventy five lakh sixty eight thousand three hundred eighty two.  
 6,03,13,752 → Six crore three lakh thirteen thousand seven hundred fifty two.  
 27,69,28,315 → Twenty seven crore sixty nine lakh twenty eight thousand three hundred fifteen.

**Important** To write large numbers with commas, the first comma is put after three digits from the right and then, after every two digits.

**Remember**

To write large numbers in a simple form, we use a comma (,) after every period.

**Place Value** ●

The place value of any digit in a number depends upon the place of that digit in the number.

**Example 1 :** Find the place value of each digit in 34,28,76,541.

**Solution :** In 34,28,76,541 →

Place value of 1	= 1 ones	= $1 \times 1$	= 1
Place value of 4	= 4 tens	= $4 \times 10$	= 40
Place value of 5	= 5 hundreds	= $5 \times 100$	= 500
Place value of 6	= 6 thousands	= $6 \times 1000$	= 6,000
Place value of 7	= 7 ten thousands	= $7 \times 10000$	= 70,000
Place value of 8	= 8 lakhs	= $8 \times 100000$	= 8,00,000
Place value of 2	= 2 ten lakhs	= $2 \times 1000000$	= 20,00,000
Place value of 4	= 4 crores	= $4 \times 10000000$	= 4,00,00,000
Place value of 3	= 3 ten crores	= $3 \times 100000000$	= 30,00,00,000



**Exercise 2.1**

**1. Write according to Indian Place Value System by putting commas :**

- (a) 4623451      (b) 5234320      (c) 80999216      (d) 163645367  
 (e) 66330195      (f) 400301501      (g) 471563800      (h) 42400375

**2. In the given numbers, write the period and place in which the coloured digit are located:**

- (a) 62154329      (b) 6543241      (c) 8587912      (d) 13003015  
 (e) 24054163      (f) 244310054      (h) 57638849      (i) 327864055

**3. Write the given numbers in words according to the Indian Place Value System :**

- (a) 5432944      (b) 8432154      (c) 6435421      (d) 4575273  
 (e) 931057089      (f) 70565312      (g) 295664023      (h) 93923604

#### 4. Write the given numbers in figures by putting in commas :

- (a) Thirty four lakhs fifty six thousand five hundred thirty
- (b) Fifteen lakhs forty five thousand three hundred forty four
- (c) Twelve crores thirty three lakhs six hundred three
- (d) Five crores one lakhs three thousand nineteen

#### 5. Write the place value of 4 in the given numbers :

- (a) 34106315    (b) 873421331    (c) 45380051    (d) 943296031    (e) 436132515

#### 6. Write the following in figures :

- (a) Smallest 7-digit number    (b) Largest 8-digit number    (c) Largest 9-digit number

#### 7. Write the largest 7-digit number in both figures and words.

#### 8. Write the largest 8-digit number in both figures and words.

### Expanded Form ●

In the previous class, we had read that the expanded form of any number may be written by three methods.

Let us see, how :

**Example 1 :** Write 3624173 in expanded form.

**Solution :**

Period ⇒	Lakhs		Thousands		Ones		
Place ⇒	Ten Lakhs 10,00,000	Lakhs 1,00,000	Ten thousands 10,000	Thous- ands 1,000	Hundr- eds 100	Tens 10	Ones 1
3624173 ⇒	3	6	2	4	1	7	3

**Method 1 :** The expanded form of 3624173 = 3 ten lakhs + 6 one lakhs + 2 ten thousands + 4 one thousands + 1 hundreds + 7 tens + 3 ones

**Method 2 :** The expanded form of 3624173 =  $(3 \times 10,00,000) + (6 \times 1,00,000) + (2 \times 10,000) + (4 \times 1000) + (1 \times 100) + (7 \times 10) + (3 \times 1)$

**Method 3 :** The expanded form of 3624173 =  $3000000 + 600000 + 20000 + 4000 + 100 + 70 + 3$

In the same way, we can write the 8-digit and 9-digit numbers in expanded form by these three methods.

**Example 2 :** Write “Four crore sixty five lakh seventy two thousand nine hundred sixty three” and “Thirty five crore ninety one lakh four hundred six” in expanded form.

**Solution :** On writing “Four crore sixty five lakh seventy two thousand nine hundred sixty three” and “Thirty five crore ninety one lakh four hundred six” in place value table, we get :

Period ⇒	Crores		Lakhs		Thousands		Ones		
Place ⇒	Ten Crore 10,00,00,000	Crores 1,00,00,000	Ten Lakhs 10,00,000	Lakh 1,00,000	Ten thousands 10,000	Thousand 1,000	Hundreds 100	Tens 10	Ones 1
46572963 ⇒		4	6	5	7	2	9	6	3
359100406 ⇒	3	5	9	1	0	0	4	0	6

**(a) Method 1:** Expanded form of 46572963 = 4 one crores + 6 ten lakhs + 5 one lakhs + 7 ten thousands + 2 one thousands + 9 hundreds + 6 tens + 3 ones

**Method 2 :** Expanded form of 46572963 =  $(4 \times 1,00,00,000) + (6 \times 10,00,000) + (5 \times 1,00,000) + (7 \times 10,000) + (2 \times 1000) + (9 \times 100) + (6 \times 10) + (3 \times 1)$

**Method 3 :** Expanded form of 46572963 = 40000000 + 6000000 + 500000 + 70000 + 2000 + 900 + 60 + 3

**(b) Method 1:** Expanded form of 359100406 = 3 ten crores + 5 one crores + 9 ten lakhs + 1 one lakhs + 4 hundreds + 6 ones

**Method 2 :** Expanded form of 359100406 =  $(3 \times 10,00,00,000) + (5 \times 1,00,00,000) + (9 \times 10,00,000) + (1 \times 1,00,000) + (4 \times 100) + (6 \times 1)$

**Method 3 :** Expanded form of 359100406 = 300000000 + 50000000 + 9000000 + 100000 + 400 + 6

### Short Form ●

If a number has been written in expanded form, its digits can be written in standard form.

**Example 1 :** Write 5 ten crores + 9 one lakhs + 4 ten thousands + 3 hundreds + 2 tens + 5 ones in standard form.

**Solution :** 5 ten crores + 9 one lakhs + 4 ten thousands + 3 hundreds + 2 tens + 5 ones = 500940325

**Example 2 :** Write  $(1 \times 1,00,00,000) + (5 \times 1,00,000) + (4 \times 1,000) + (3 \times 10) + (2 \times 1)$  in standard form.

**Solution :**  $(1 \times 1,00,00,000) + (5 \times 1,00,000) + (4 \times 1,000) + (3 \times 10) + (2 \times 1) = 10504032$

**Example 3 :** Write  $60000000 + 3000000 + 200000 + 4000 + 300 + 6$  in standard form.

**Solution :**  $60000000 + 3000000 + 200000 + 4000 + 300 + 6 = 63204306$



## Exercise 2.2

### 1. Write the following in expanded form :

(a) 63032105

(b) 40030358

(c) 320100903

(d) 532845112

### 2. Write the following in short form :

(a) 6 ten crores + 9 one crores + 7 ten lakhs + 4 ten thousands + 2 one thousands + 5 hundreds + 4 ones

(b)  $(5 \times 1,00,00,000) + (6 \times 10,00,000) + (3 \times 10,000) + (2 \times 1,000) + (6 \times 10) + (5 \times 1)$

(c)  $300000000 + 4000000 + 900000 + 6000 + 20 + 4$

(d) 4 ten crores + 9 one lakhs + 5 hundreds + 2 ones

### 3. Fill in the blanks :

(a)  $60032100 = \square$  crore +  $\square$  ten thousands + 2  $\square$  +  $\square$  hundreds

(b)  $103096003 = (\square \times 10,00,00,000) + (3 \times \square) + (9 \times \square)$   
 $+ (\square \times 1000) + (3 \times \square)$

(c)  $450301407 = 400000000 + 50000000 + \square + 1000 + \square + \square$

## Comparison of Numbers ●

**Rule 1 :** Of the given two non-equal numbers, the one with more number of digits is larger.

**Example :** Of 74,35,62,179 and 9,37,94,613, which one is larger?

**Solution :** The number of digits in 74,35,62,179 is = 9 while the number of digits in 9,37,94,613 is = 8

$\therefore 9 > 8$

$\therefore 74,35,62,179 > 9,37,94,613$  **Answer**

**Rule 2 :** Of the given two numbers with equal number of digits, the number whose extreme left digit has more value is larger.

**Example :** Of 6,51,44,031 and 7,96,44,052, which one is larger?

**Solution :** The number of digits in 6,51,44,031 and 7,96,44,052 is = 8 (equal)

The extreme left digit in 6,51,44,031 is 6.

The extreme left digit in 7,96,44,052 is 7.

$\therefore 7 > 6$

$\therefore 7,96,44,052 > 6,51,44,031$  **Answer**

**Rule 3 :** If the digit on the left in both the numbers is equal, then the numbers next to them are compared. Whichever has the digit with the higher value is larger.

**Example :** Of 53,62,00,549 and 54,17,00,321, which one is larger?

**Solution :** The number of digits in 53,62,00,549 and 54,17,00,321 is = 9 (equal)

The extreme left digit in both the number is = 5 (equal)

$\therefore 4 > 3$

(digit after the extreme left digit)

$\therefore 54,17,00,321 > 53,62,00,549$  **Answer**

**Ascending and Descending Order ●** Numbers in an ascending order, the smallest digit is written first, then the digit bigger to it and so on.

**Example :** Write 6,35,00,371; 5,37,32,014 and 14,30,70,051 in ascending order.



**Solution** :  $\therefore 5,37,32,014 < 6,35,00,371 < 14,30,70,051$

This way, the ascending order is: 5,37,32,014; 6,35,00,371; 14,30,70,051. **Ans.**

**2. Descending Order** : To write the numbers in a descending order, the largest digit is written first, then the smaller digit and so on.

**Example** : Write 9,46,33,105; 19,57,42,109 and 17,57,42,901 in descending order :

**Solution** :  $\therefore 19,57,42,109 > 17,57,42,901 > 9,46,33,105$

This way, the descending order is = 19,57,42,109; 17,57,42,901; 9,46,33,105 **Ans.**



## Exercise 2.3

**1. Fill > or < in the blanks :**

(a) 5,43,00,521  32,59,01,362

(b) 11,13,42,151  9,89,45,132

(c) 9,43,16,541  2,16,43,102

(d) 32,45,00,113  45,32,16,781

(e) 6,31,47,189  6,45,32,164

(f) 32,14,00,113  33,15,00,111

**2. Write the following in ascending order :**

(a) 6,34,21,503; 5,73,01,943; 3,45,40,132

(b) 40,03,12,105; 68,06,05,209; 9,35,00,111

(c) 53,21,10,514; 7,29,14,321; 65,45,77,109

(d) 2,14,03,465; 15,06,05,901; 15,06,04,901

**3. Write the following in descending order :**

(a) 2,15,34,989; 12,38,45,105; 12,37,45,105

(b) 6,84,36,501; 6,84,46,903; 15,31,45,500

(c) 19,05,06,607; 19,05,06,807; 19,06,05,807

(d) 14,23,25,222; 5,64,48,617; 11,23,25,132



## International Place Value Chart ●

Children, the chart which we use to write the numbers till now is called the 'Indian Place Value Chart'. It is used in our country. But in most other countries, another system of numeration is used. This is called International Place Value System. You have read about it in the previous class also. Let us revise the same :

Period ⇒	Millions			Thousands			Ones		
Place ⇒	Hundred Millions	Ten Millions	One Millions	Hundred Thousands	Ten Thousands	One Thousands	Hundreds	Tens	Ones
	100,000,000	10,000,000	1,000,000	100,000	10,000	1,000	100	10	1

### The differences with Indian Place Value System :

- (a) Here, periods for 9 places have been made whereas Indian Place Value System has 4 periods.
- (b) Here, every period has 3 columns whereas in the Indian Place Value System, the ones period has 3 columns while the other periods have 2 columns each.

### The similarities with Indian Place Value System :

- (a) In both the systems, the digits of a period are read together.
- (b) In both the systems, leaving the ones period, the names of other periods are read with their digits.
- (c) To write the digits in both the systems, commas are put after each period.

Comparing both the systems, we find that

100 thousands = 1 lakh, 1 million = 10 lakh, 10 million = 1 crore, 100 million = 10 crore

**Example :** Write 63254218 and 245001743 in International Place Value Chart.

**Solution :**

Period ⇒	Millions			Thousands			Ones		
Place ⇒	Hundred millions	Ten millions	One millions	Hundred thousands	Ten thousands	One thousands	Hundreds	Tens	Ones
	100,000,000	10,000,000	1,000,000	100,000	10,000	1,000	100	10	1
63254218 ⇒		6	3	2	5	4	2	1	8
245001743 ⇒	2	4	5	0	0	1	7	4	3

According to International Place Value System :

63254218 is written as : 63,254,218

and read as : Sixty three million two hundred fifty four thousand two hundred eighteen.

245001743 is written as : 245,001,743

and read as : Two hundred forty five million one thousand seven hundred forty three.



### Exercise 2.4

#### 1. Write the given numbers in words according to International Place Value System :

- (a) 60354143                      (b) 32006151                      (c) 553300140                      (d) 631752701
- (e) 301004321                      (f) 541130010                      (g) 643501010                      (h) 420301053

#### 2. Write the following in numbers according to International Place Value System :

- (a) Two million one hundred nine thousand five hundred fifteen
- (b) Twenty eight million five thousand three hundred nine
- (c) One hundred three million twelve thousand twenty seven
- (d) Three hundred sixty million five hundred thousand eight