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MASTERING MATHEMATICS

Part - 5



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PREFACE

We are very pleased to present the new series 'Mastering Mathematics'.

The series comprises of eight books for classes I to VIII.

The series has been aimed at building a strong foundation with clear concepts and providing a great deal of practice in mathematics.

The Subject matter has been produced in such a way that it focuses on the development of the understanding, thinking and reasoning skill of the students.

The subject matter has been presented keeping in mind the principle that mathematics teaching involves the mastery of one skill before progressing to another. The age, the mental level and the difficulties faced by the students at all levels have also been thought of while presenting different concepts.

Everything has been explained elaborately with plenty of illustrations so that the things might be crystal clear.

The latest syllabus prescribed by N.C.E.R.T. has been strictly followed and no stone has been left unturned in making the students equipped with the ability to understand and solve problems confidently.

The series of books is the result of sincere efforts of the entire team



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UNIT 1



Numbers and Numeration

Revision Exercise

1. Write the following numbers in the place value chart :

- (a) 4852 (b) 7632 (c) 39542 (d) 14825
 (e) 78295 (f) 86305 (g) 170054 (h) 363294

2. Write the face value, place and place value of the coloured digit :

- (a) **3**962 (b) 48**5**4 (c) 36**0**78 (d) **8**6459
 (e) **6**3249 (f) 548**6**2 (g) **1**48629 (h) 427**6**21

3. Write the following numbers in expanded form :

- (a) 2634 (b) 7405 (c) 38692 (d) 45824
 (e) 904057 (f) 63432 (g) 286325 (h) 760305

4. Write the following numbers in short form :

- (a) 7000 + 500 + 20 + 7 = _____
 (b) 80000 + 6000 + 300 + 80 + 7 = _____
 (c) 90000 + 8000 + 600 + 30 + 9 = _____
 (d) 40000 + 200 + 4 = _____
 (e) 90000 + 6000 + 200 + 50 + 7 = _____
 (f) 700000 + 20000 + 3000 + 700 + 50 + 6 = _____

5. Write the following numbers in the Indian place value chart :

- (a) 48567 (b) 62754 (c) 328696 (d) 563248

| | Crores | | Lakhs | | Thousands | | Ones | | | ← Period |
|-----|--------|---|-------|---|-----------|----|------|---|---|----------|
| | TC | C | TL | L | TTh | Th | H | T | O | ← Place |
| (a) | | | | | | | | | | |
| (b) | | | | | | | | | | |
| (c) | | | | | | | | | | |
| (d) | | | | | | | | | | |

6. Write the following numbers in the International place value chart :

- (a) 64598 (b) 326547 (c) 4825049 (d) 6325473

| Billions | | | Millions | | | Thousands | | | Ones | | | ← Period |
|----------|----|---|----------|----|---|-----------|-----|----|------|---|---|----------|
| HB | TB | B | HM | TM | M | HTh | TTh | Th | H | T | O | ← Place |
| (a) | | | | | | | | | | | | |
| (b) | | | | | | | | | | | | |
| (c) | | | | | | | | | | | | |
| (d) | | | | | | | | | | | | |

7. Put commas in the following numbers to separate the periods according to the Indian place value chart :

- (a) 14382 (b) 54639 (c) 6398115 (d) 862739
 (e) 627458 (f) 6453291 (g) 405763 (h) 892543

8. Put commas in the following numbers to separate the periods according to the International place value chart :

- (a) 27645 (b) 482567 (c) 8254635 (d) 1814576
 (e) 392548 (f) 2846292 (g) 745863 (h) 645494

9. Write the number names of the following numbers according to the Indian place value chart:

- (a) 4325 _____
 (b) 62785 _____
 (c) 345798 _____
 (d) 4956347 _____

10. Write the number names of the following numbers according to the International place value chart :

- (a) 63874 _____
 (b) 864592 _____
 (c) 4305767 _____
 (d) 5486329 _____



11. Form the smallest and greatest number by rearranging the digits :

| Digits | Smallest number | Greatest number |
|------------|-----------------|-----------------|
| (a) 7058 | _____ | _____ |
| (b) 32849 | _____ | _____ |
| (c) 48256 | _____ | _____ |
| (d) 541063 | _____ | _____ |

12. Compare the numbers and put $<$, $>$ or $=$ in the box :

| | | | | | |
|-----------|----------------------|--------|-----------|----------------------|-------|
| (a) 4563 | <input type="text"/> | 2849 | (b) 64578 | <input type="text"/> | 7634 |
| (c) 74329 | <input type="text"/> | 76456 | (d) 83214 | <input type="text"/> | 83195 |
| (e) 48624 | <input type="text"/> | 449821 | (f) 61274 | <input type="text"/> | 61249 |

13. Write the following numbers in ascending order :

- (a) 4863, 4945, 4632, 4754
- (b) 6482, 5734, 8627, 9542
- (c) 3456, 3478, 3417, 3439
- (d) 81473, 81464, 81489, 81421

14. Write the following numbers in descending order :

- (a) 3245, 3469, 3846, 3475
- (b) 86432, 54186, 37492, 98452
- (c) 81643, 81517, 81862, 81763
- (d) 54683, 54679, 54661, 54693

15. Skip counting by 25, write the next 4 numbers of the series :

- (a) 450, 475, _____, _____, _____, _____
- (b) 1000, 1025, _____, _____, _____, _____

16. Skip counting by 50, write the next 4 numbers of the series :

- (a) 4750, 4800, _____, _____, _____, _____
- (b) 7860, 7910, _____, _____, _____, _____

17. Skip counting by 100, write the next 4 numbers of the series :

- (a) 5632, 5732, _____, _____, _____, _____
- (b) 7840, 7940, _____, _____, _____, _____



Numbers upto Ten Crores

In class IV, you have learned numbers upto ten lakhs. Their addition, subtraction, multiplication etc. You also had an idea about numbers in crores and ten crores. In our day to day life, we often come across the following kinds of sentences.

"The prices of residential properties are increasing very fast. The price of this bungalow is 2 crore rupees. Recently I.P.L. tournament of cricket was held in India and many of the players were paid crores of rupees for playing for the teams.

Do you know what is the population of India? The population of India is alarmingly increasing and now it is above 100 crores."

In all the above examples, the numbers referred were in crores.

Look at the places according to the Indian place value chart. We must read the places from the right hand side, as usual from ones.

Ten Crores ← Crores ← Ten Lakhs ← Lakhs ← Thousands ← Hundreds ← Tens ← Ones

The last digit of a number or the digit at the extreme right hand is ones, the second right digit is tens, the third right digit is hundreds and so on.

$9 + 1 = 10$ is the smallest 2 digit number and 99 is the greatest 2 digit number.

$99 + 1 = 100$ is the smallest 3 digit number and 999 is the greatest 3 digit number.

$999 + 1 = 1000$ is the smallest 4 digit number and 9999 is the greatest 4 digit number.

$9999 + 1 = 10000$ is the smallest 5 digit number and 99999 is the greatest 5 digit number.

$99999 + 1 = 100000$ is the smallest 6 digit number and 999999 is the greatest 6 digit number.

$999999 + 1 = 1000000$ is the smallest 7 digit number and 9999999 is the greatest 7 digit number.

$9999999 + 1 = 10000000$ is the smallest 8 digit number and 99999999 is the greatest 8 digit number.

$99999999 + 1 = 100000000$ is the smallest 9 digit number and 999999999 is the greatest 9 digit number.

You know that

100000 is read as one lakh and 999999 is read as nine lakh ninety nine thousand nine hundred ninety nine.

1000000 is read as ten lakh and 9999999 is read as ninety nine lakh ninety nine thousand nine hundred ninety nine.

10000000 is read as one crore and 99999999 is read as nine crore ninety nine lakh ninety nine thousand nine hundred ninety nine.

100000000 is read as Ten crore and 999999999 is read as ninety nine crore ninety nine lakh ninety nine thousand nine hundred ninety nine.

Now, look at the following table :

| Numbers having places upto | Ones | Tens | Hundreds | Thousands | Ten Thousands |
|----------------------------|--------|----------|------------|--------------|----------------|
| Number of digits | 1 | 2 | 3 | 4 | 5 |
| Series of numbers | 1 to 9 | 10 to 99 | 100 to 999 | 1000 to 9999 | 10000 to 99999 |

| Numbers having places upto | Lakhs | Ten Lakhs | Crores | Ten Crores |
|----------------------------|------------------|--------------------|----------------------|------------------------|
| Number of digits | 6 | 7 | 8 | 9 |
| Series of numbers | 100000 to 999999 | 1000000 to 9999999 | 10000000 to 99999999 | 100000000 to 999999999 |

Example 1.

Write the following numbers in the place value chart :

- (a) 4567832 (b) 5682389 (c) 43276805 (d) 782576326

Solution :

| | TC | C | TL | L | TTh | Th | H | T | O |
|-----|----|---|----|---|-----|----|---|---|---|
| (a) | | | 4 | 5 | 6 | 7 | 8 | 3 | 2 |
| (b) | | | 5 | 6 | 8 | 2 | 3 | 8 | 9 |
| (c) | | 4 | 3 | 2 | 7 | 6 | 8 | 0 | 5 |
| (d) | 7 | 8 | 2 | 5 | 7 | 6 | 3 | 2 | 6 |



Example 2.

Write the face value, place and place value of the coloured digits of the following numbers :

- (a) 45236785 (b) 65782196 (c) 738215769 (d) 245698234

 Solution :

| | Number | Face value | Place | Place value |
|-----|-----------|------------|------------|-------------|
| (a) | 45236785 | 5 | Ten Lakhs | 5000000 |
| (b) | 65782196 | 6 | Crores | 60000000 |
| (c) | 738215769 | 7 | Ten Crores | 700000000 |
| (d) | 245698234 | 6 | Lakhs | 600000 |

Periods in the Indian and International Place value system

You know that in India, we mostly use the Indian place value system to read and write number names. But there is an another system as well to write places of numbers and to read them, used world wide. It is the International system of writing numbers. There are a few differences in the Indian place value system and the International place value system which are as follows :

Indian Place value System

1. The first period has three places. Rest of the periods have two places each.
2. The place name after ten thousands is *lakhs*.
3. Ten *lakhs*, *crore*, ten *crores* etc. come after *lakhs*.

International place value System

1. All the periods including the first period have three places.
2. The place name after ten thousands is *hundred thousands*.
3. The places after hundred thousands are *millions*, *ten millions*, *hundred million* *billions* etc.

Indian place Value System

| Crores | | Lakhs | | Thousands | | Ones | | |
|-------------------------|--------------------|----------------------|-----------------|------------------------|-------------------|-----------------|------------|-----------|
| Ten Crores 100000000 | Crores 10000000 | Ten Lakhs 1000000 | Lakhs 100000 | Ten Thousands 10000 | Thousands 1000 | Hundreds 100 | Tens 10 | Ones 1 |
| TC | C | TL | L | TTh | Th | H | T | O |

Commas : Commas are put in the numerals to separate periods In Indian system of numeration first period has three places. Therefore the first comma is put after three digits (starting from right). Then as the second period onwards each period has two places therefore commas are put after every second digit, of course moving towards the left hand side.

International Place value System

As you have learned it earlier, the places of different digits of a number are governed by periods. Each period has three places. See the following chart.

| Billions | | | Millions | | | Thousands | | | Ones | | |
|----------------------------------|-----------------------------|------------------------|-------------------------------|--------------------------|---------------------|-----------------------------|------------------------|-------------------|-----------------|------------|-----------|
| Hundred Billions 100000000000 | Ten Billions 10000000000 | Billions 1000000000 | Hundred Millions 100000000 | Ten Millions 10000000 | Millions 1000000 | Hundred Thousands 100000 | Ten Thousands 10000 | Thousands 1000 | hundreds 100 | Tens 10 | Ones 1 |
| HB | TB | B | HM | TM | M | HTh | TTh | Th | H | T | O |

← Period

← Place

Commas : In International system as well, commas are put to separate the periods. As you know each period has three places so, commas are put after every third digit counting from ones digit, obviously starting from right and moving towards the left hand side.

 **Example 1.**

Write the following numbers in the International place value chart :

- (a) 476325 (b) 58632945 (c) 863245784 (d) 3275428635

 **Solution :**

| Billions | | | Millions | | | Thousands | | | Ones | | | ← Period |
|----------|----|---|----------|----|---|-----------|-----|----|------|---|---|----------|
| HB | TB | B | HM | TM | M | HTh | TTh | Th | H | T | O | ← Place |
| (a) | | | | | | 4 | 7 | 6 | 3 | 2 | 5 | |
| (b) | | | | 5 | 8 | 6 | 3 | 2 | 9 | 4 | 5 | |
| (c) | | | 8 | 6 | 3 | 2 | 4 | 5 | 7 | 8 | 4 | |
| (d) | | 3 | 2 | 7 | 5 | 4 | 2 | 8 | 6 | 3 | 5 | |

 **Example 2.**

Write the following numbers in the Indian place value chart :

- (a) 632578 (b) 47358639 (c) 6392548 (d) 863457632

| Crores | | Lakhs | | Thousands | | Ones | | | ← Period |
|--------|---|-------|---|-----------|----|------|---|---|----------|
| TC | C | TL | L | TTh | Th | H | T | O | ← Place |
| (a) | | | 6 | 3 | 2 | 5 | 7 | 8 | |
| (b) | 4 | 7 | 3 | 5 | 8 | 6 | 3 | 9 | |
| (c) | | 6 | 3 | 9 | 2 | 5 | 4 | 8 | |
| (d) | 8 | 6 | 3 | 4 | 5 | 7 | 6 | 3 | 2 |

Writing number names

Points to remember while writing a number name

- ❖ Write the place name above each digit. It will make easier to write a number name.
- ❖ Put commas to separate the periods according to the system of place value you are using.
- ❖ Do not write places in plural like seven hundreds, four thousands etc. While writing number names. Always write like seven hundred, five thousand etc.
- ❖ Do not put commas in between a number name.
- ❖ Use of word 'and' is not required to write a number name.

Example 3.

Put commas to separate the periods according to the International place value system and write number names of the following numbers :

(a) 436584 (b) 7634578 (c) 48632549 (d) 547832632

Solution :

(a) 436,584

Number name : Four hundred thirty six thousand five hundred eighty four.

(b) 7,634,578

Number name : Seven million six hundred thirty four thousand five hundred seventy eight.

(c) 48,632,549

Number name : Forty eight million six hundred thirty two thousand five hundred forty nine.

(d) 547,832,632

Number name : Five hundred forty seven million eight hundred thirty two thousand six hundred thirty two.

Example 4.

Put commas to separate the periods and write the number names according to the Indian place value system.

- (a) 763954 (b) 8263254 (c) 48754295 (d) 958632754

 **Solution :**

- (a) 7,63,954

Number name : Seven lakh sixty three thousand nine hundred fifty four.

- (b) 82,63,254

Number name : Eighty two lakh sixty three thousand two hundred fifty four.

- (c) 4,87,54,295

Number name : Four crore eighty seven lakh fifty four thousand two hundred ninety five.

- (d) 95,86,32,754

Number name : Ninety five crore eighty six lakh thirty two thousand seven hundred fifty four.

EXERCISE : 1

1. Write the following numbers in the Indian place value chart :

- (a) 325782 (b) 93263954 (c) 8639254
(d) 78654354 (e) 862945136 (f) 549632817

2. Write the following numbers in the International place value chart :

- (a) 257687 (b) 4853726 (c) 76382549
(d) 645896328 (e) 93456782 (f) 8634279547

3. Put commas to separate the period in the following numbers and write the number names according to the Indian place value system :

- (a) 632574 (b) 8648257 (c) 7839548
(d) 45763287 (e) 86549238 (f) 376546863

4. Put commas in the following numbers to separate the period and write the number names according to the International place value system :

- (a) 826354 (b) 5418326 (c) 76382459
 (d) 48632592 (e) 863549245 (f) 387648153

5. Write the numerals for the following number names :

Indian system

- (a) Forty two lakh thirty five thousand two hundred twenty one _____.
 (b) Three crore twenty two lakh sixty five thousand seven hundred eighty two _____.
 (c) Five crore eight lakh seven thousand three hundred seventy six _____.
 (d) Thirty eight crore fifty three lakh seventy two thousand four hundred eighty one. _____
 (e) Sixty crore thirty two lakh four hundred fifty five. _____

International system

- (a) Two hundred twelve thousand six hundred thirty two. _____
 (b) Eight million seven hundred thirty five thousand two hundred fifty seven. _____
 (c) Seventy six million three hundred twenty five thousand eight hundred thirty five. _____
 (d) Forty million seventy thousand two hundred eight. _____
 (e) Six hundred forty nine million eight hundred sixty eight thousand five hundred thirty five. _____

Writing Place value of digits

Place value of a digit is the value of digit associated with its place in a number. It is calculated by multiplying face value with the place of a digit.

$$\text{Place value of a digit} = \text{its face value} \times \text{its place.}$$

Inspite of having the face value same, the place value of digits may differ. For example see the following numbers.

67358 and 43275

$$\begin{aligned} \text{The place value of 7 in the first number} &= 7 \times 1000 = 7000 \\ &(\text{As 7 is at thousands place}) \end{aligned}$$

$$\begin{aligned} \text{The place value of 7 in the second number} &= 7 \times 10 = 70 \\ &(\text{As 7 is at tens place}) \end{aligned}$$



Example 1.

Write the place value of each digit of 63257943

Solution :

Let's write place name above each digit of the number.

| C | TL | L | TTh | Th | H | T | O |
|----|----|----|-----|----|---|----|---|
| 6, | 3, | 2, | 5, | 7, | 9 | 4, | 3 |

3 is at ones place \therefore the place value of $3 = 3 \times 1 = 3$

4 is at tens place \therefore the place value of $4 = 4 \times 10 = 40$

9 is at hundreds place \therefore the place value of $9 = 9 \times 100 = 900$

7 is at thousands place \therefore the place value of $7 = 7 \times 1000 = 7000$

5 is at ten thousands place \therefore the place value of $5 = 5 \times 10000 = 50000$

2 is at lakhs place \therefore the place value of $2 = 2 \times 100000 = 200000$

3 is at ten lakhs place \therefore the place value of $3 = 3 \times 1000000 = 3000000$

6 is at crores place \therefore the place value of $6 = 6 \times 10000000 = 60000000$

Example 2.

Write the place value of each digit of 832765482.

Solution :

Let's write the place name above each digit of the

| TC | C | TL | L | TTh | Th | H | T | O |
|----|----|----|----|-----|----|----|----|---|
| 8, | 3, | 2, | 7, | 6, | 5 | 4, | 8, | 2 |

2 is at ones place \therefore the place value of $2 = 2 \times 1 = 2$

8 is at tens place \therefore the place value of $8 = 8 \times 10 = 80$

4 is at hundreds place \therefore the place value of $4 = 4 \times 100 = 400$

5 is at thousands place \therefore the place value of $5 = 5 \times 1000 = 5000$

6 is at ten thousands place \therefore the place value of $6 = 6 \times 10000 = 60000$

7 is at lakhs place \therefore the place value of $7 = 7 \times 100000 = 700000$

2 is at ten lakhs place \therefore the place value of $2 = 2 \times 1000000 = 2000000$

3 is at crores place \therefore the place value of $3 = 3 \times 10000000 = 30000000$

8 is at ten crores place \therefore the place value of $8 = 8 \times 100000000 = 800000000$

Writing numbers in Expanded Form

You know it well to write the place value of each digit of a number separately with plus signs (+) between them that is called writing the expanded form of a number.

Example 1.

Write the expanded form of 83546276.

Solution :

Let's write the place name above each digit of the number.

| | | | | | | | |
|----|----|----|-----|----|----|----|---|
| C | TL | L | TTh | Th | H | T | O |
| 8, | 3, | 5, | 4, | 6, | 2, | 7, | 6 |

$$\begin{aligned}
 \therefore 8,35,46,276 &= 8 \text{ crores} + 3 \text{ ten lakhs} + 5 \text{ lakhs} + 4 \text{ ten thousands} + 6 \text{ thousands} + \\
 &\quad 2 \text{ hundreds} + 7 \text{ tens} + 6 \text{ ones.} \\
 &= 8 \times 10000000 + 3 \times 1000000 + 5 \times 100000 + 4 \times 10000 + 6 \times \\
 &\quad 1000 + 2 \times 100 + 7 \times 10 + 6 \\
 &= 80000000 + 3000000 + 500000 + 40000 + 6000 + 200 + 70 + 6
 \end{aligned}$$

Comparison of Numbers

To compare two or more numbers, we must follow the following steps.

- ☆ First of all count the number of digits in the given numbers. The number with more digits is greater and the number with less digits is smaller.

Example : $486328 < 2549385$

- ☆ If the number of digits is same in the given numbers start to compare the digits from the left hand side. For this, compare the first left most digit of the numbers. The number with greater digit is greater.

If the first left most digit is same compare the second left digit and so on.

Examples : $835427 > 739854$
 $435862 > 435405$

- ☆ When we have to compare more than two numbers, It is better to write them in the place value chart as it makes the comparison easier.

Example 1.

Compare the following numbers and state which one is greater:

4863258 and 4865249

Solution :

Let's write the place name above each digit.

| | | | | | | | | | | | | | |
|----|---|-----|----|---|---|---|----|---|-----|----|---|---|---|
| TL | L | TTh | Th | H | T | O | TL | L | TTh | Th | H | T | O |
| 4 | 8 | 6 | 3 | 2 | 5 | 8 | 4 | 8 | 6 | 5 | 2 | 4 | 9 |

1. The number of digits is equal in both the numbers.
2. The digits at ten lakhs place, lakhs place and ten thousands place are same.
3. So, we must compare the next digit, i.e., digit at the thousands place

$$3 < 5$$

$$\therefore 4863258 < 4865249$$

Example 2.

Arrange the following numbers in descending order.

4763295, 547634832, 4782354, 83458273

Solution :

Let's write the number in the place value chart

| TC | C | TL | L | TTh | Th | H | T | O |
|----|---|----|---|-----|----|---|---|---|
| | | 4 | 7 | 6 | 3 | 2 | 9 | 5 |
| 5 | 4 | 7 | 6 | 3 | 4 | 8 | 3 | 2 |
| | | 4 | 7 | 8 | 2 | 3 | 5 | 4 |
| | 8 | 3 | 4 | 5 | 8 | 2 | 7 | 3 |

Descending order means numbers from the greatest to smallest 547634832 has the greatest number of digits so, it is the greatest number.

83458273 has the second greatest number of digits so, it is the second greatest number.

4763295 and 4782354 have equal number of digits so, let's start comparing the digits from the highest place, that is, from the left hand side.

The digits at the ten lakhs place and lakhs place are same.

On comparing the digit at ten thousands place, we find that $8 > 6$

Therefore 4782354 is greater than 4763295

Hence, the numbers in descending order are :

$$547634832 > 83458273 > 4782354 > 4763295$$

Example 3.

Write the following numbers in ascending order.

4854392, 63548269, 63543578, 4856392

 **Solution :**

Let's write the numbers in the place value chart

| C | TL | L | TTh | Th | H | T | O |
|---|----|---|-----|----|---|---|---|
| | 4 | 8 | 5 | 4 | 3 | 9 | 2 |
| 6 | 3 | 5 | 4 | 8 | 2 | 6 | 9 |
| 6 | 3 | 5 | 4 | 3 | 5 | 7 | 8 |
| | 4 | 8 | 5 | 6 | 3 | 9 | 2 |

Numbers in ascending order means numbers from the smallest to greatest.

Here 4854392 and 4856392 have 7 digits each and other numbers have 8 digits each.

So, 4854392 and 4856392 are smaller than the other numbers.

Now let's compare the digits of these two numbers.

The digits at ten lakhs, lakhs and ten thousands places are same in these two numbers.

So let's compare the digits at thousands place.

$$4 < 6$$

Therefore 4854392 is smaller than 4856392

Now let's compare 63548269 and 63543578

The digits at crores, ten lakhs, lakhs and ten thousands places are same.

So, let's compare the digits at thousands places.

$$3 < 8$$

Therefore 63543578 is smaller than 63548296

Hence, the numbers in ascending order are :

$$4854392 < 4856392 < 63543578 < 63548296$$



EXERCISE : 2

1. Write the place value of each digit of the following numbers :

- | | | |
|---------------|---------------|---------------|
| (a) 4832589 | (b) 6328457 | (c) 6386395 |
| (d) 503860562 | (e) 935863045 | (f) 865407683 |

2. Write the following numbers in expanded form :

- | | | |
|---------------|--------------|---------------|
| (a) 4380257 | (b) 6340054 | (c) 86340598 |
| (d) 764532860 | (e) 84605395 | (f) 260450832 |

3. Write the place value of the coloured digit in the following numbers :

- | | | |
|--------------|---------------|---------------|
| (a) 63254098 | (b) 483276548 | (c) 327015492 |
| (d) 45782638 | (e) 942548636 | (f) 840578632 |

4. Write the following numbers in short form :

- (a) $7000000 + 600000 + 8000 + 20 + 6$ = _____
- (b) $80000000 + 300000 + 70000 + 5000 + 400 + 2$ = _____
- (c) $500000000 + 60000000 + 30000 + 4000 + 100 + 70 + 3$ = _____
- (d) $800000000 + 90000000 + 2000000 + 700000 + 30000 + 6000 + 200 + 10 + 7$ = _____

- (e) $60000000 + 500000 + 60000 + 8000 + 300 + 20 + 5$ = _____
- (f) $80000000 + 300000 + 5000 + 40 + 7$ = _____

5. Compare the following numbers and put < or > between them :

- | | | | | | |
|-------------|----------------------|----------|--------------|----------------------|----------|
| (a) 632574 | <input type="text"/> | 638596 | (b) 926384 | <input type="text"/> | 4573286 |
| (c) 7985428 | | 7986321 | (d) 8459263 | | 8459541 |
| (e) 8734563 | | 49548672 | (f) 26459283 | | 26586324 |

- (c) 4745832, 6789542, 632184, 594386
- (d) 73218635, 7321549, 7620814, 7621832

7. Encircle the greatest number of the following numbers :

- (a) 4382596, 563982, 634582, 764926
- (b) 4863925, 4864983, 4865478, 4863405
- (c) 9381632, 9341859, 83612845, 8624598
- (d) 1498256, 1498289, 1498288, 1498220

8. Arrange the following numbers in Ascending order :

- (a) 4963258, 4639546, 4645834, 4958623
- (b) 8634594, 8634283, 8634197, 8634256
- (c) 79328745, 79328645, 79328165, 793288667
- (d) 456382706, 456382495, 456382486, 456382498

9. Arrange the following numbers in descending order :

- (a) 3645982, 375982, 3849345, 3458493
- (b) 6850492, 6850376, 6850488, 6850367
- (c) 175482363, 3621745, 86374594, 946329
- (d) 3245962, 3246185, 3247158, 3245194

Forming the greatest and smallest number with the given digits

- ☆ To form the greatest number with the given digits, arrange the digits in the **descending** order and to form the smallest number with the given digits, arrange them in the **ascending** order.
- ☆ Remember that while writing the number in ascending order to form the smallest number. '0' should not be written at the extreme left position. If we do so, it reduces the number of places in the number as '0' is insignificant at the extreme left position.
- ☆ We may write '0' second left place onwards.

Example 1.

Form the greatest number with the following digits : 4, 3, 9, 5, 8, 6, and 2

Solution :

The digits in descending order are : $9 > 8 > 6 > 5 > 4 > 3 > 2$

So, the greatest number formed with the digits is:

98, 65, 432

Example 2.

Form the smallest number with the following digits : 4, 3, 7, 8, 0, 3, 6, 5

Solution :

The digits in ascending order are : $0 < 3 = 3 < 4 < 5 < 6 < 7 < 8$ Here we have to write 3 two times at its appropriate place.

The smallest digit is '0' which we can not write at the extreme left place. So, we must write the next digit (3) in the increasing order first followed by '0'. So, the smallest number formed with the given digits is : 3, 03, 45, 678

Skip Counting

In skip counting we are required to write the next numbers after the given interval to continue the series.



Example 1.

Skip counting by 50, write the next 5 numbers :

- (a) 8740 (b) 9966 (c) 7354 (d) 854860

 Solution :

- (a) 8740, 8790, 8840, 8890, 8940, 8990
(b) 10016, 10066, 10116, 10166, 10216, 10266
(c) 7354, 7404, 7454, 7504, 7554, 7604
(d) 854860, 854910, 854960, 855010, 855060, 855110

Example 2.

Counting by 1000 write the next 4 numbers :

- (a) 637582 (b) 763486 (c) 796482 (d) 863495

 Solution :

- (a) 637582, 638582, 639582, 640582, 641582
(b) 763486, 764486, 765486, 766486, 767486
(c) 796482, 797482, 798482, 799482, 800482
(d) 863495, 864495, 865495, 866495, 867495

Example 3.

Skip counting by 10000, write the next 4 numbers :

- (A) 76325 (b) 483792 (c) 84563 (d) 487632

 Solution :

- (a) 76325, 86325, 96325, 106325, 116325
(b) 483792, 493792, 503792, 513792, 523792
(c) 84563, 94563, 104563, 114563, 124563
(d) 487632, 497632, 507632, 517632, 527632

Example 4.

Skip counting by 100000 write the next 4 numbers :

- (a) 485632 (b) 2986345 (c) 34582644 (d) 8145796

 Solution :

- (a) 485632, 585632, 685632, 785632, 885632
(b) 2986345, 3086345, 3186345, 3286345, 3386345
(c) 34582644, 34682644, 34782644, 34882644, 34982644
(d) 8145796, 8245796, 8345796, 8445796, 8545796

An easy tip to write numbers by skip counting.

If you are writing skip counting by 100 the simple method is go on adding 100 every time to get the next number.

But practically what you need to do is just add 1 to the hundreds digit of the number to get the next number of the series.

To write skip counting by 1000, just add 1 to the thousands digit of the number to get the next number of the series.

Similarly, to write skip counting by 10000, just add 1 to the ten thousands digit of the number to get the next number of the series and so on.

Examples : Skip counting by 100 : 58632 = 58732

↑
+
1

Skip counting by 100000 : 8694932 = 8794932

↑
+
1



EXERCISE : 3

- Form the greatest number with the digits : 4, 3, 8, 2, 9, 5, 6
- Form the smallest number with the digits : 8, 2, 7, 0, 9, 5, 4, 3
- Form the greatest number with the digits : 1, 7, 0, 8, 5, 4, 9, 2, 2
- Form the smallest number with the digits : 8, 9, 1, 4, 3, 2, 0, 6, 0
- Form the greatest and smallest number with following digits and find their difference :
4, 8, 9, 0, 2, 5, 3
- Form the greatest and smallest number with the following digits and find their difference:
3, 7, 8, 2, 5, 4, 0
- Skip counting by 100, write the next 4 numbers of the series.
(a) 76395 (b) 584324 (c) 3549 (d) 87832
- Skip counting by 1000, write the next 4 numbers of the series.
(a) 48632 (b) 745638 (c) 86325 (d) 584327
- Skip counting by 10000, write the next 4 numbers of the series.
(a) 64582 (b) 798454 (c) 363045 (d) 8194563
- Skip counting by 100000, write the next 4 numbers of the series.
(a) 876395 (b) 648654 (c) 1863795 (d) 3248926
- Fill in the blanks :
 - Every next place from right to left in the place value chart is _____ times more than the previous place.
 - _____ thousands or _____ ten thousands make 1 lakh.
 - _____ lakhs or _____ ten lakhs make 1 crore.
 - _____ lakhs = 1 million.
 - 1 crore = _____ million.