Formation of Numbers

The formation of numbers refers to how we can create numbers by arranging digits in different places: ones, tens, hundreds, and thousands. A 4-digit number is made up of digits placed in each of these four places.

For example:

2,436 is a 4-digit number where:

- 2 is in the thousands place (2,000).

- 4 is in the hundreds place (400).

- 3 is in the tens place (30).

- 6 is in the one's place (6).

How to Form Numbers

To form a number up to ten thousand:

- Choose four digits. Each digit will go into the ones, tens, hundreds, or thousands place.

- Arrange these digits in the correct order to form the desired number.

  For example:

- If you are given the digits 1, 7, 3, 9, the largest number you can form is 9,731, and the smallest number you can form is 1,379.
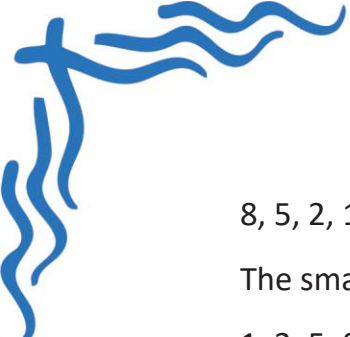
Properties of Formation of Numbers

- Each digit has its place value: The digit in the thousands place represents thousands, in the hundreds place represents hundreds, in the tens place represents tens, and in the one's, place represents ones.

- Arrangement of digits matters: Changing the position of the digits results in a completely different number.

- The largest 4-digit number is 9,999, and the smallest 4-digit number is 1,000.

Example 1

Question: Write the largest and smallest numbers using the digits 5, 8, 2, and 1.

Solution: The largest number is formed by arranging the digits in descending order:

8, 5, 2, 1 = 8,521.

The smallest number is formed by arranging the digits in ascending order:

1, 2, 5, 8 = 1,258.

Answer: The largest number is 8,521, and the smallest number is 1,258.

Example 2

Question: Form a number between 4,000 and 5,000 using the digits 6, 3, 8, and 7.

Solution:

We need to place 4 in the thousands place to form a number between 4,000 and 5,000.

Arrange the remaining digits in descending order:

4, 7, 6, 3 = 4,763.

Answer: The number formed is 4,763.

Summary Points

- Formation of numbers involves arranging digits in the correct order based on their place values (ones, tens, hundreds, thousands).

- The largest number is formed by arranging digits in descending order, and the smallest number is formed by arranging digits in ascending order.

- The smallest 4-digit number is 1,000, and the largest 4-digit number is 9,999.