

Exercise 1.3

Q.1 How many four digit numbers are there in all?

Solution Largest four digit number = 9999

Smallest four digit number = 1000

$$\begin{aligned}\therefore \text{Number of 4-digit numbers} &= (9999 - 1000) + 1 \\ &= 8999 + 1 \\ &= 9000\end{aligned}$$

Hence there are 9000 four digit numbers.

Q.2 Write the Smallest and the largest six digit numbers. How many numbers are between these two?

Sol: Smallest six digit number = 100000
Largest six digit number = 999999

$$\begin{aligned}\text{Number of numbers between these} &= (999999 - 100000) - 1 \\ &= 899999 - 1 \\ &= 899998\end{aligned}$$

Q.3 How many 8 digit numbers are there in all?

Sol Smallest 8 digit number = 10000000
Largest 8 digit number = 99999999

$$\begin{aligned}\therefore \text{Number of 8 digit numbers} &= (99999999 - 10000000) + 1 \\ &= 8,99,99,999 + 1 \\ &= 9,00,00,000\end{aligned}$$

Q.4 write 10075302 in words and rearrange the digits to get the smallest and largest number

Solution 10075302 = one crore seventy five thousand three hundred two.

To get smallest 8 digit number we put smallest digit (except 0) at highest place value and put largest digit in one's place.

∴ required smallest number = 10002357

To get largest digit we put largest digit at ~~the~~ highest place value and smallest digit at one's place.

∴ required largest number = 75321000

Q.5 what is the smallest 3 digit number with unique digits.

Solution: 102 is smallest three digit number using unique digits.

Q.6 what is the largest 5 digit number with unique digits?

Sol: 98765

Q.7 write the smallest 3-digit number which does not change if the digits are written in reverse order.

Solution: Such required number is 101.

Q.8 Find the difference between the number 279 and that obtained on reversing its digits.

Sol: original number = 279

Number obtained by reversing the digits = 972

$$\therefore \text{Difference} = 972 - 279 \\ = 693$$

Q.9 Form the largest and the smallest 4-digit numbers using each of digits 7, 1, 0, 5 only once

Solution: For largest number

Thousand's place = 7
hundred's place = 5
Ten's place = 1
one's place = 0

$$\therefore \text{required number} = 7510$$

For Smallest number: Thousand place = 1

hundred's place = 0
Ten's place = 5
one's place = 7

$$\therefore \text{required number} = 1057$$