

Expanded form and standard form

Expressing a number in different ways

Numbers can be expressed in many different ways:

- **Writing numbers in words** that is reading a number name
- **Standard form** that is writing in numerals by placing commas properly 42,67,392
- **Expanded form** that is writing the place values of each digit
 $42,67,392 = 40,00,000 + 2,00,000 + 60,000 + 7,000 + 300 + 90 + 2$
- **Expanded form in words** = 4 ten lakhs + 2 lakhs + 6 ten thousands + 7 thousands + 3 hundreds + 9 tens + 2 ones

Example 6: Write the number 6,34,25,425 in expanded form and expanded form in words:

Solution: 6,34,25,425

Expanded form:

$$6,00,00,000 + 30,00,000 + 4,00,000 + 20,000 + 5,000 + 400 + 20 + 5$$

Expanded form in words:

6 crores + 3 ten lakhs + 4 lakhs + 2 ten thousands + 5 thousands + 4 hundreds + 2 tens + 5 ones

Example 7: write the numerals in the standard form:

$$60,00,00,000 + 3,00,00,000 + 20,00,000 + 9,00,000 + 40,000 + 8,000 + 600 + 30 + 5$$

Solution:

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

Number in standard form is: 63,29,48,635.

Predecessor and successor

The predecessor of a number is one less than the given number. To find the predecessor of a given number subtract 1 from the number.

- For a given number, the predecessor of that number will be smaller.
- Zero (0) does not have a predecessor.

The successor of a number is the number obtained by adding 1 to it. This number comes just after the given number.

- For a given number, the successor is greater than the given number.

REMEMBER

Expanded form of a number is the sum of the place values of its digits



Example 8: Find the predecessor of the given numbers:

(a) 46,14,83,643

(b) 22,42,500

Solution:

(a) $46,14,83,643 - 1 = 46,14,83,642$

(b) $22,42,500 - 1 = 22,42,499$

Example 9: Find the successor of the following numbers:

(a) 38,96,142

(b) 3,42,92,499

Solution: (a) $38,96,142 + 1 = 38,96,143$

(b) $3,42,92,499 + 1 = 3,42,92,500$

Exercise 1.2

Q1. Write the following numbers in the expanded form.

(a) 1,34,63,242

(b) 15,63,242

(c) 4,18,24,636

(d) 38,24,093

(e) 67,82,43,119

(f) 1,12,42,500

Q2. Write the following numbers in the short form.

(a) $6,00,00,000 + 40,00,000 + 6,00,000 + 20,000 + 4,000 + 3$

(b) $20,00,00,000 + 4,00,00,000 + 30,00,000 + 2,00,000 + 10,000 + 9,000 + 200 + 4$

(c) $10,00,000 + 6,00,000 + 40,000 + 2,000 + 400$

(d) $9,00,00,000 + 80,00,000 + 2,00,000 + 10,000 + 2,000 + 300 + 3$

(e) $20,00,000 + 2,00,000 + 4,000 + 700 + 50$

(f) $10,00,00,000 + 2,00,00,000 + 80,00,000 + 30,000 + 1,000 + 200 + 40 + 2$

Q3. Write the following numbers in expanded form in words.

(a) 47,63,240

(b) 2,83,43,626

(c) 25,04,300

(d) 29,11,12,342

(e) 81,04,90,005

(f) 6,13,12,118

Q4. Write the predecessor of the following numbers.

(a) 3,46,24,327

(b) 20,18,24,400

(c) 13,25,207

(d) 43,26,93,000

(e) 42,26,39,050

(f) 73,46,030

Q5. Write the successor of each of the following numbers.

(a) 36,78,428

(b) 31,42,63,229

(c) 63,05,099

(d) 24,69,999

(e) 46,65,93,399

(f) 25,99,999