Whole Numbers

1. Write the next three natural numbers after 10999.

Solutions:

The next three natural numbers after 10999 are 11000, 11001 and 11002.

2. Write the three whole numbers occurring just before 10001.

Solutions:

The three whole numbers occurring just before 10001 are 10000, 9999 and 9998.

3. Which is the smallest whole number?

Solutions:

The smallest whole number is 0.

4. How many whole numbers are there between 32 and 53?

Solutions:

The whole numbers between 32 and 53 are as follows:

(33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52)

Hence, there are 20 whole numbers between 32 and 53

5. Write the successor of:

(a) 2440701 (b) 100199 (c) 1099999 (d) 2345670

Solutions:

The successors are

(a) 2440701 + 1 = 2440702

(b) 100199 + 1 = 100200

(c) 1099999 + 1 = 1100000

(d) 2345670 + 1 = 2345671

6. Write the predecessor of:

(a) 94 (b) 10000 (c) 208090 (d) 7654321

Solutions:

The predecessors are

(a) 94 – 1 = 93

(b) 10000 – 1 = 9999

(c) 208090 – 1 = 208089

(d) 7654321 – 1 = 7654320

7. In each of the following pairs of numbers, state which whole number is on the left of the other number on the number line. Also, write them with the appropriate sign (>, <) between them.

(a) 530, 503 (b) 370, 307 (c) 98765, 56789 (d) 9830415, 10023001

Solutions:

(a) 530 > 503

Hence, 503 is on the left side of 530 on the number line.

(b) 370 > 307

Hence, 307 is on the left side of 370 on the number line.

(c) 98765 > 56789

Hence, 56789 is on the left side of 98765 on the number line.

(d) 9830415 < 10023001

Hence, 9830415 is on the left side of 10023001 on the number line

Extra Questions

Question 1.
Write the smallest whole number.
Solution:
0 is the smallest whole number.

Question 2.
What is the predecessor of whole number 0?
Solution:
Whole number 0 has no predecessor.

Question 3.
Which property do the following statements hold?
(a) 6 + 4 = 4 + 6
(b) 3 + 2 = whole number
Solution:
(a) 6 + 4 = 4 + 6 holds commutative property of addition
(b) 3 + 2 = whole number holds closure property.

Question 4.
Add the following in three ways. Indicate the property used.
(a) 25 + 36 + 15
(b) 30 + 18 + 22
Solution:
(a) 25 + 36 + 15
Way I: 25 + (36 + 15) = 25 + 51 = 76
Way II: (25 + 36) + 15 = 61 + 15 = 76
Way III: (25 + 15) + 36 = 40 + 36 = 76
Here, we have used associative property.

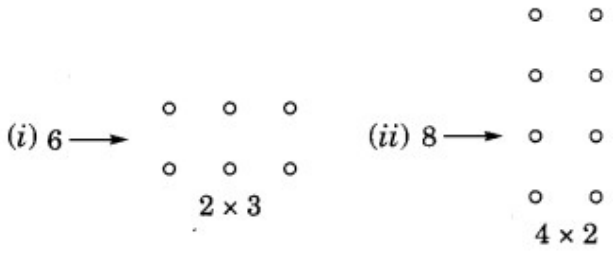
(b) 30 + 18 + 22
Way I: 30 + (18 + 22) = 30 + 40 = 70
Way II: (30 + 18) + 22 = 48 + 22 = 70
Way III: (30 + 22) + 18 = 52 + 18 = 70
Here, we have used associative property.

Question 5.
Using distributive property, solve the following:
(a) 360 x 102
(b) 35 x 98
Solution:
(a) 36 x 102 = 36 x (100 + 2)
= 36 x 100 + 36 x 2
= -36000 + 72 = 36072

(b) 35 x 98 = 35 x (100 – 2) = 35 x 100 – 35 x 2
= 3500 – 70 = 3430

Question 6.
Find the product of the greatest 3-digit number and the smallest 2-digit number.
Solution:
The greatest 3-digit number = 999
The smallest 2-digit number = 10
∴ Product = 999 x 10 = 9990

Question 7.
Write any two numbers which can be shown as rectangles.
Solution:



Question 8.
Write the predecessor of the smallest 4-digit number.
Solution:
The smallest 4-digit number = 1000
∴ The predecessor of 1000 = 1000 – 1 = 999

Question 9.
For n = 5, verify the given statement 10 x n + 1 = n1
Solution:
Given statement is
10 x n + 1 = n1
Put n = 5, 10 x 5 + 1 = 51
⇒ 50 + 1 = 51
⇒ 51 = 51. Hence, verified.

Question 10.
Write the next two steps:

$$1 \times 9 + 2 = 11$$
$$12 \times 9 + 3 = 111$$

Solution:
Next two steps are 123 x 9 + 4 = 1111 and 1234 x 9 + 5 = 11111.

Question 11.
Using the properties, find the values of each of the following:
(a) 736 x 102
(b) 8165 x 169 – 8165 x 69
Solution:
(a) 736 x 102 = 736 x (100 + 2)
= 736 x 100 + 736 x 2 [Using distributive property]
= 73600 + 1472 = 75072

(b) 8165 x 169 – 8165 x 69 = 8165 x (169 – 69) [Using distributive property]
= 8165 x 100 = 816500

Question 12.
Observe the following patterns and extend them by two more terms.

$$11 \times 11 = 121$$
$$101 \times 101 = 10201$$
$$10101 \times 10101 = 102030201$$

Solution:
Next two terms are
1010101 × 1010101= 1020304030201
101010101 × 101010101=10203040504030201

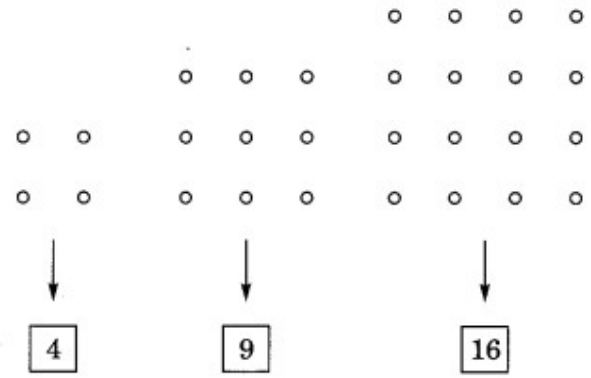
Question 13.
Observe the following patterns and extend them by two more terms:

$$15873 \times 7 \times 1 = 111111$$
$$15873 \times 7 \times 2 = 222222$$

Solution:
Next two terms are
15873 x 7 x 3 = 333333
15873 x 7 x 4 = 444444

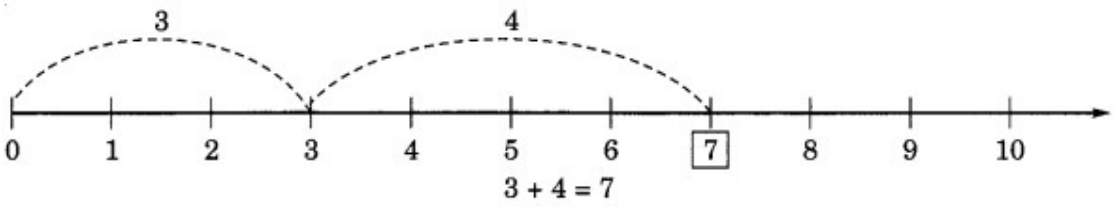
Question 14.
Write the three whole numbers which can be arranged as squares.
Solution:

The required number are 4, 9, 16.



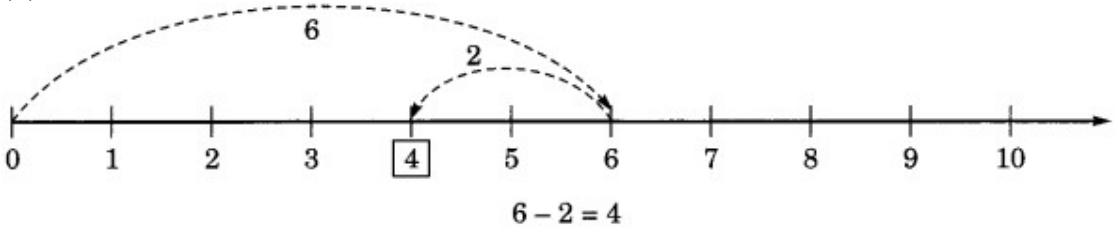
Question 15.
Using the properties of whole numbers, find the value of the following in suitable way:
(a) 945 x 4 x 25
(b) 40 x 328 x 25
Solution:
(a) 945 x 4 x 25 = 945 x (4 x 25)
= 945 x 100 = 94500
(b) 40 x 328 x 25 = 328 x (40 x 25)
= 328 x 1000 = 328000

Question 16.
Represent the following on number line:
(a) 3 + 4
(b) 6 – 2
(c) 2 × 4
Solution:
(a) 3 + 4



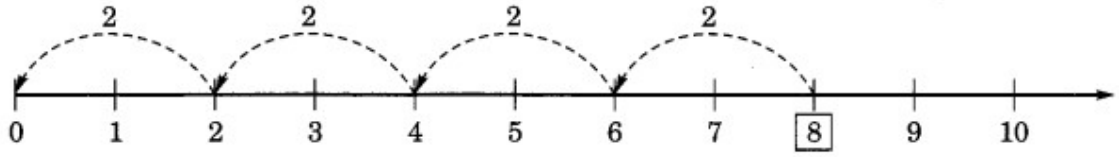
3 + 4 = 7

(b) 6 – 2



6 – 2 = 4

(c) 2 × 4



$2 \times 4 = 2 + 2 + 2 + 2 = 8$

Question 17.
Give one example for each of the following properties for whole numbers.
(a) Closure property
(b) Commutative property
(c) Associative property
(d) Distributive property
Solution:
(a) 3 + 4 = 7 (whole number) closure property
(b) 4 + 5 = 5 + 4 Commutative property
(c) 3 + (5 + 7) = (3 + 5) + 7 Associative property
(d) 6 x (8 + 3) = 6 x 8 + 6 x 3 Distributive property.

Question 18.
A dealer purchased 124 LED sets. If the cost of one set is ₹38,540, determine their total cost.
Solution:
Total cost of 124 LED sets = ₹(38,540 x 124)
= ₹ [38,540 x (100 + 20 + 4)]
= ₹ [38,540 x 100 + 38,540 x 20 + 38,540 x 4]
= ₹ [38,54,000 + 7,70,800 + 1,54,160]
= ₹ 47,789,60

Question 19.
Find the product of the greatest 3-digit number and the greatest 2-digit number.
Solution:
Greatest 3-digit number = 999
Greatest 2-digit number = 99
∴ Product = 999 x 99 = 999 x (100 – 1)
= 999 x 100 – 999 x 1
= 99900 – 999 = 98901

Question 20.
Write 10 such numbers which can be shown only as line.
Solution:
2, 5, 7, 11, 13, 17, 19, 23, 29 and 31 are such numbers which can be shown only as line.
123 x 9 + 4 = 1111.