

## EXERCISE 2.1

(1)

Q1:- Answer the following questions.

(a) write the smallest whole number.

Ans: 0

(b) write the smallest natural number,

Ans: 1

(c) write the successor of 0 in whole numbers.

Ans: 1

(d) write the Predecessor of 0 in whole numbers.

Ans: Not Possible as 0 is smallest whole number.

(e) Largest whole number.

Ans: Not Possible

Q2:- which of the following statements are True (T) and which are False (F)

(a) zero is smallest natural number.

Ans: F

(b) zero is the smallest whole number.

Ans: T

(c) Every whole number is a natural number.

Ans: F

(d) Every natural number is a whole number.

Ans: T

(e) 1 is the smallest whole number.

Ans: F

(f) The natural number 1 has no Predecessor in natural numbers.

Ans: T

(g) The whole number 1 has no Predecessor in natural number.

Ans: F

(h) Successor of the largest two digit number is smallest three digit number.

Ans: T

(i) The Successor of a two digit Number is always a two digit number.

Ans: F

(J) 300 is the Predecessor of 299.

Ans:- F

(K) 500 is the Successor of 499.

Ans: T

(L) The Predecessor of a two digit number is never a single digit number.

Ans: F

Q3:- write the Successor of Each of following.

(a) 100909

$$\begin{array}{r} \text{Ans:- } 100909 \\ + \quad \quad 1 \\ \hline 100910 \end{array}$$

(b) 4630999

$$\begin{array}{r} \text{Ans:- } 4630999 \\ + \quad \quad 1 \\ \hline 4631000 \end{array}$$

(c) 830001

$$\begin{array}{r} \text{Ans:- } 830001 \\ + \quad \quad 1 \\ \hline 830002 \end{array}$$

(d) 99999

$$\begin{array}{r} \text{Ans:- } 99999 \\ + \quad \quad 1 \\ \hline 100000 \end{array}$$

Q4:- write the Predecessor of Each of following.

(a) 1000

$$\begin{array}{r} \text{Ans:- } 1000 \\ - \quad \quad 1 \\ \hline 999 \end{array}$$

(b) 208090

$$\begin{array}{r} \text{Ans:- } 208090 \\ - \quad \quad 1 \\ \hline 208089 \end{array}$$

(c) 7654321

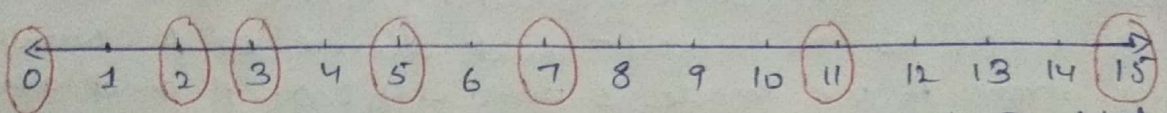
$$\begin{array}{r} \text{Ans:- } 7654321 \\ - \quad \quad 1 \\ \hline 7654320 \end{array}$$

(d) 12576

$$\begin{array}{r} \text{Ans:- } 12576 \\ - \quad \quad 1 \\ \hline 12575 \end{array}$$

Q5 - Represent the following numbers on numberline.  
2, 0, 3, 5, 7, 11, 15

Ans:-



Draw a line. Mark a point on it. label it 0. Make the second point to the right of 0. Label it 1. mark a point to the right of 1 and at unit distance from 1 and label it 2. In this way we can label 3, 5, 7, 11, 15.

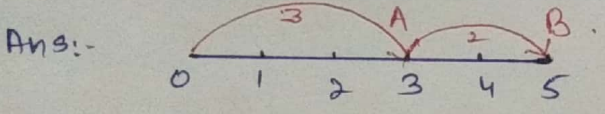
Q6:- How many whole numbers are there between 22 and 43?

Ans:- 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42

There are 20 whole numbers between 22 and 43.

Q7:- Draw a number line to represent each of the following on it.

(a)  $3+2$

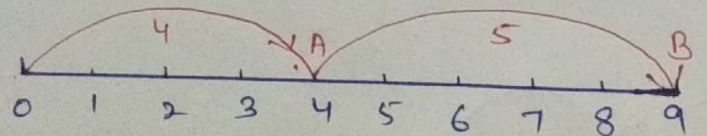


we draw a number line and move 3 steps from 0 to the right and mark this point as A. Now starting from A, we move 2 steps towards right and arrive at B.

$OA=3, OB=5, AB=2$

Hence,  $OB = 3+2=5$

(b)  $4+5$

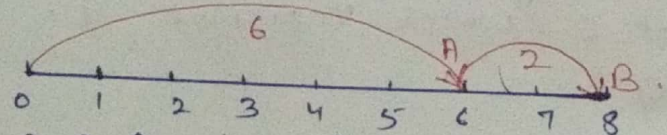


we draw a number line and move 4 steps from 0 to the right and mark this point as A. Now starting from A, we move 5 steps toward right and arrive at B.

$OA=4, AB=5, OB=9$

Hence,  $OB = 4+5=9$

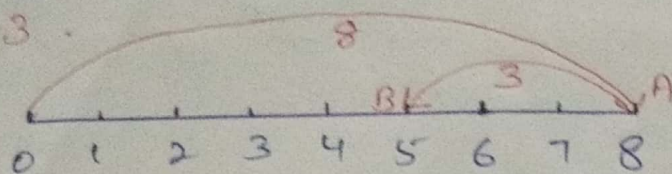
(c)  $6+2$



we draw a number line and move 6 steps from 0 to the right and mark this point as A. Now starting from A, we move 2 steps toward right and Arrive at B.

$OA=6, AB=2, OB=8$   
Hence  $OB = 6+2=8$

(d)  $8-3$

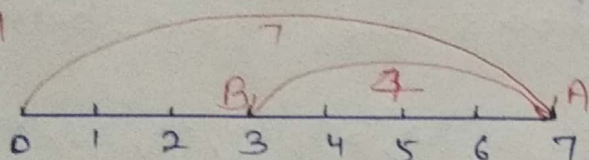


We draw a number line. Starting from Point 0, we move 8 steps to the right and arrive at A. Now starting from A we move 3 unit left of A and arrive at B.

$$OA = 8, AB = 3$$

$$OB = 8 - 3 = 5$$

(e)  $7-4$

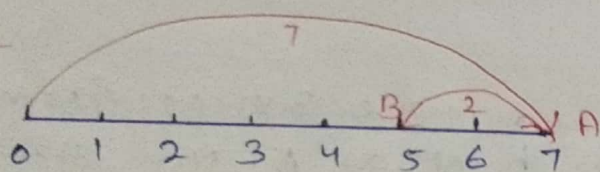


We draw a number line. Starting from Point 0, we move 7 steps to the right and arrive at A. Now starting from A we move 4 unit left of A and arrive at B.

$$OA = 7, AB = 4$$

$$OB = 7 - 4 = 3$$

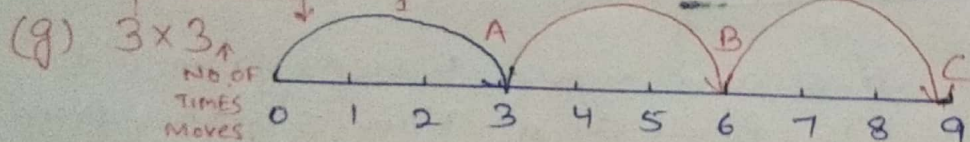
(f)  $7-2$



We draw a number line starting from Point 0, we move 7 steps to the right and arrive at A. Now starting from A we move 2 unit left of A and arrive at B.

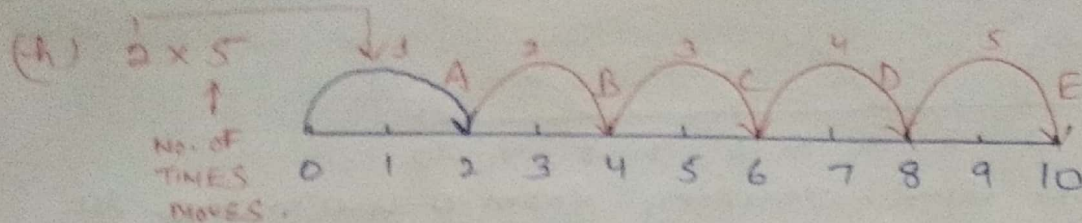
$$OA = 7, AB = 2$$

$$OB = 7 - 2 = 5$$



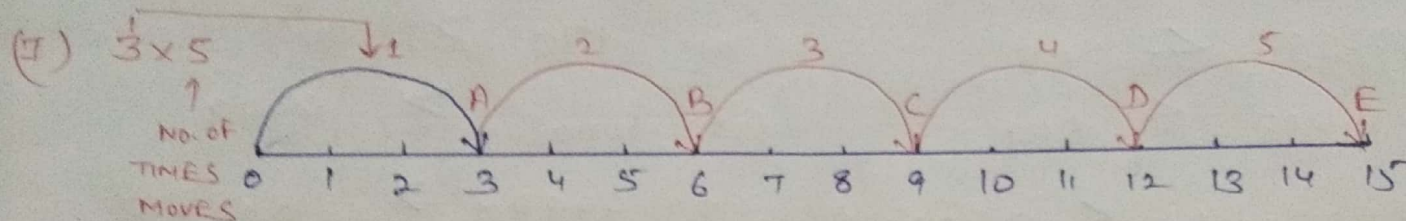
We draw a number line. Starting from 0 we move 3 units to the right of 0 to arrive at A. We make 2 more such moves (starting from A) (total 3 moves of 3 unit each) to reach finally at C, which represents 9.

$$\text{Hence } 3 \times 3 = 9$$



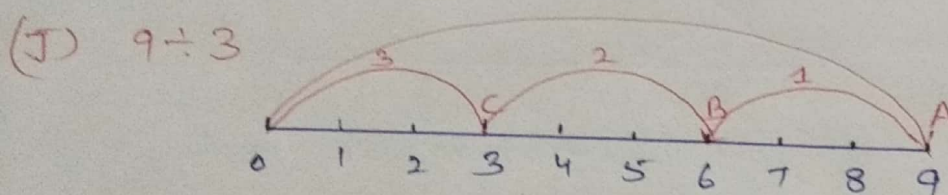
we draw a number line. starting from 0 we move 2 units to the right of 0 to arrive at A. we make 4 more such moves starting from A. (Total 5 moves of 2 unit each) to reach finally at E which represent 10.

Hence,  $2 \times 5 = 10$



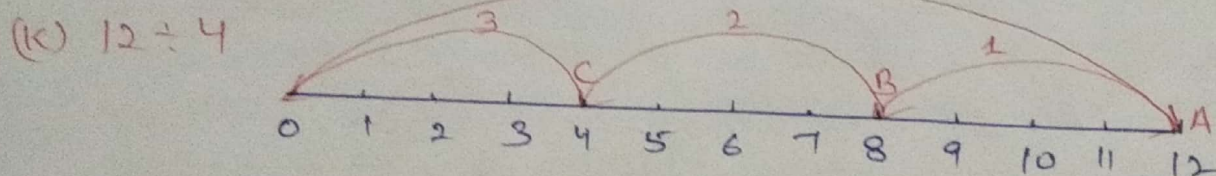
we draw a number line. starting from 0 we move 3 units to the right of 0 to arrive at A. we make 4 more moves starting from A (Total 5 moves of 3 unit each) to reach finally at E which represent 15.

Hence,  $3 \times 5 = 15$



Draw a number line. starting from 0 we move 9 units to the right of 0 to arrive at A. Now from A takes moves of 3 units to the left of A till we reach at 0. we observe that there are 3 moves.

So,  $9 \div 3 = 3$

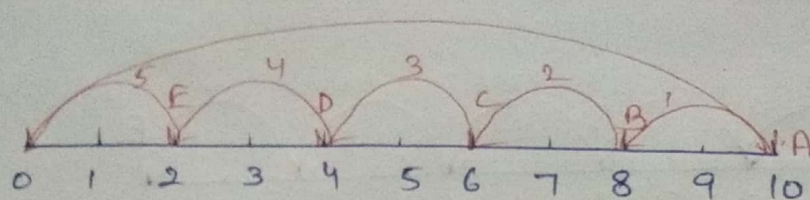


Draw a number line. Starting from 0, we move 12 units to the right of 0 to arrive at A. Now from A takes moves of 4 units to the left of A till we reach at 0. we observe that there are 3 moves.

So,  $12 \div 4 = 3$

(L)  $10 \div 2$

(6)



Draw a number line. Starting from 0 we move 10 units to the right of 0 to arrive at A. Now from A takes moves of 2 units each to the left of A till we reach at 0. We observe that there are 5 moves.

So,  $10 \div 2 = 5$

Q8:- Fill in the blanks with appropriate symbol  $<$  or  $>$

(a)  $25 \underline{<} 205$

(b)  $170 \underline{>} 107$

(c)  $415 \underline{<} 514$

(d)  $10001 \underline{>} 9999$

(e)  $2300014 \underline{<} 2300041$

(f)  $99999 \underline{>} 888888$

Q1: Find the Sum by suitable arrangement of terms:

(a)  $837 + 208 + 363$

(b)  $1962 + 453 + 1538 + 647$

$$\begin{aligned}\text{Ans: } 837 + 208 + 363 \\ &= 837 + 363 + 208 \\ &= 1200 + 208 \\ &= 1408\end{aligned}$$

$$\begin{aligned}\text{Ans: } 1962 + 453 + 1538 + 647 \\ &= 1962 + 1538 + 453 + 647 \\ &= 3500 + 1100 \\ &= 4600\end{aligned}$$

Q2: Find the Product by suitable arrangement of terms:

(a)  $2 \times 1497 \times 50$

(f)  $125 \times 40 \times 8 \times 25$

$$\begin{aligned}\text{Ans: } 2 \times 1497 \times 50 \\ &= (2 \times 50) \times 1497 \\ &= 100 \times 1497 \\ &= 149700\end{aligned}$$

$$\begin{aligned}\text{Ans: } 125 \times 40 \times 8 \times 25 \\ &= (125 \times 8) \times (40 \times 25) \\ &= (1000) \times (1000) \\ &= 1000 \times 1000 \\ &= 1000000\end{aligned}$$

(b)  $4 \times 263 \times 25$   
 $\Rightarrow (4 \times 25) \times 263$   
 $\Rightarrow 100 \times 263$   
 $\Rightarrow 26300$

(g)  $30921 \times 25 \times 40 \times 2$

$$\begin{aligned}\text{Ans: } 30921 \times 25 \times 40 \times 2 \\ &= 30921 \times 2 \times (25 \times 40) \\ &= 30921 \times 2 \times 1000 \\ &= 30921 \times 2000 \\ &= 61842000\end{aligned}$$

(c)  $8 \times 163 \times 125$

$$\begin{aligned}\text{Ans: } (8 \times 125) \times 163 \\ &\Rightarrow 1000 \times 163 \\ &= 163000\end{aligned}$$

(h)  $4 \times 2 \times 1932 \times 125$

$$\begin{aligned}\text{Ans: } 4 \times 2 \times 1932 \times 125 \\ &= (4 \times 125) \times 2 \times 1932 \\ &= 500 \times 2 \times 1932 \\ &= (500 \times 2) \times 1932 \\ &= 1000 \times 1932 \\ &= 1932000\end{aligned}$$

(d)  $963 \times 16 \times 25$

$$\begin{aligned}\text{Ans: } 963 \times 16 \times 25 \\ &= 963 \times (16 \times 25) \\ &= 963 \times 400 \\ &= 385200\end{aligned}$$

(i)  $5462 \times 25 \times 4 \times 2$

$$\begin{aligned}\text{Ans: } 5462 \times 25 \times 4 \times 2 \\ &= 5462 \times (4 \times 25) \times 2 \\ &= 5462 \times 100 \times 2 \\ &= 5462 \times 200 \\ &= 1092400\end{aligned}$$

(e)  $5 \times 171 \times 60$

$$\begin{aligned}\text{Ans: } 5 \times 171 \times 60 \\ &= (5 \times 60) \times 171 \\ &= 300 \times 171 \\ &= 51300\end{aligned}$$

Q3:- Find the value of Each of the following using distributive Property: (8)

(a)  $(649 \times 8) + (649 \times 2)$

Ans:-  $(649 \times 8) + (649 \times 2)$

$\Rightarrow 649 \times (8+2)$  (using Distributive Property of multiplication over addition)

$\Rightarrow 649 \times 10$

$\Rightarrow 6490$

(b)  $(6524 \times 69) + (6524 \times 31)$

Ans:-  $(6524 \times 69) + (6524 \times 31)$

$\Rightarrow 6524 \times (69+31)$  (using Distributive Property of multiplication over addition)

$\Rightarrow 6524 \times 100$

$\Rightarrow 652400$

(c)  $(2986 \times 35) + (2986 \times 65)$

Ans:-  $2986 \times 35 + 2986 \times 65$

$\Rightarrow 2986 \times (35+65)$  (using Distributive Property of multiplication over addition)

$= 2986 \times (100)$

$= 298600$

(d)  $(6001 \times 172) - (6001 \times 72)$

Ans:-  $(6001 \times 172) - (6001 \times 72)$

$= 6001 \times (172 - 72)$  (using Distributive Property of multiplication over subtraction)

$= 6001 \times 100$

$= 600100$

Q4:- Find the value of the following:

(a)  $493 \times 8 + 493 \times 2$

Ans:-  $493 \times 8 + 493 \times 2$

$= 493 \times (8+2)$  (using Distributive Property of multiplication over addition)

$= 493 \times 10$

$= 4930$

(b)  $24579 \times 93 + 7 \times 24579$

Ans:-  $24579 \times 93 + 7 \times 24579$

$= 24579 \times (93+7)$  (using Distributive Property of multiplication over addition)

$= 24579 \times (100)$

$= 2457900$

(9)

$$(c) 3845 \times 5 \times 782 + 769 \times 25 \times 218$$

$$\text{Ans: } 3845 \times 5 \times 782 + 769 \times 25 \times 218$$

$$= 19225 \times 782 + 19225 \times 218$$

$$= 19225 \times (782 + 218) \quad [\text{using Distributive Property of multiplication over addition}]$$

$$= 19225 \times 1000$$

$$= 19225000$$

$$(d) 3297 \times 999 + 3297$$

$$\text{Ans: } 3297 \times 999 + 3297$$

$$= 3297 \times 999 + 3297 \times 1$$

$$= 3297 \times (999 + 1) \quad [\text{using Distributive Property of multiplication over addition}]$$

$$= 3297 \times 1000$$

$$= 3297000$$

Q5:- Find the Product - using suitable Properties.

$$(a) 738 \times 103$$

$$\text{Ans: } 738 \times 103$$

$$= 738 \times (100 + 3)$$

$$= 738 \times 100 + 738 \times 3 \quad [\text{using Distributive Property of multiplication}]$$

$$= 73800 + 2214$$

$$= 76014$$

$$(b) 854 \times 102$$

$$\text{Ans: } 854 \times 102$$

$$= 854 \times (100 + 2)$$

$$= 854 \times 100 + 854 \times 2 \quad [\text{using Distributive Property of multiplication}]$$

$$= 85400 + 1708$$

$$= 87108$$

$$(c) 258 \times 1008$$

$$\text{Ans: } 258 \times 1008$$

$$= 258 \times (1000 + 8)$$

$$= 258 \times 1000 + 258 \times 8 \quad [\text{using Distributive Property of multiplication}]$$

$$= 258000 + 2064$$

$$= 260,064$$

$$(d) 736 \times 93$$

$$\text{Ans: } 736 \times 93$$

$$= 736 \times (100 - 7)$$

$$= 736 \times 100 - 736 \times 7 \quad (\text{using Distributive Property of multiplication over subtraction})$$

$$= 73600 - 5152$$

$$= 68448$$

$$(e) 816 \times 745$$

$$\text{Ans: } 816 \times 745$$

$$= 745 \times 816$$

$$= 745 \times (800 + 16) \quad (\text{using Distributive Property of multiplication over addition})$$

$$= 745 \times 800 + 745 \times 16$$

$$= 596000 + 11920$$

$$= 607,920$$

$$(f) 2032 \times 613$$

$$\text{Ans: } 2032 \times 613$$

$$= 613 \times 2032$$

$$= 613 \times (2000 + 32)$$

$$= 613 \times 2000 + 613 \times 32 \quad (\text{using Distributive Property of multiplication over addition})$$

$$= 1226000 + 19616$$

$$= 1245616$$

Q6: A Taxi driver filled his car Petrol tank with 40 litres of Petrol on Monday. The next day, he filled the tank with 50 litres of Petrol. If the Petrol costs ₹ 78 Per litre. How much he spend in all on Petrol?

Ans:- Petrol filled on Monday = 40 litres.

Petrol filled on Tuesday = 50 litres.

Total Petrol filled = 90 litres.

Cost of 1 litre of Petrol = ₹ 78.

Cost of 90 litres of Petrol =  $78 \times 90$

= 7020 ₹

Q7:- A vendor supplies 32 litres of milk to a hotel in morning and 68 litres of milk in the evening. If the milk costs ₹ 35 per litre, how much money is due to the vendor per day?

Ans:- milk supplied in morning to hotel = 32 litres.  
milk supplied in Evening to hotel = 68 litres.  
Total milk supplied = 100 litres.

Cost of 1 litre milk = ₹ 35.

Cost of 100 litre milk = ₹ 35 × 100  
= 3500 ₹.

3500 ₹ is due to the vendor per day.

Q8:- We know that  $0 \times 0 = 0$ . Is there any other whole number which when multiplied by itself gives the product equal to the number itself? find out the number.

Ans:-  $1 \times 1 = 1$

Q9:- Fill in the blanks:

(a)  $15 \times 0 = \underline{0}$

(b)  $15 + 0 = \underline{15}$

(c)  $15 - 0 = \underline{15}$

(d)  $15 \div 0 = \underline{\text{Not defined}}$

(e)  $0 \times 15 = \underline{0}$

(f)  $0 + 15 = \underline{15}$

(g)  $0 \div 15 = \underline{0}$

(h)  $15 \times 1 = \underline{15}$

(i)  $15 \div 1 = \underline{15}$

(j)  $1 \div 1 = \underline{1}$

Q10:- The product of two number is zero. what do you conclude. Explain with Example.

Ans:- If the product of two number is zero. Then either one of the two number is zero or both the numbers are zero.

Example: (If one number is zero and Second Number is Non zero)  
 $0 \times 1 = 0$

Example: (If both numbers are zero)

$0 \times 0 = 0.$

Q11:- match the following:

- |                                                      |                                                     |
|------------------------------------------------------|-----------------------------------------------------|
| (i) $537 \times 106 = 537 \times 100 + 537 \times 6$ | (a) commutativity under multiplication              |
| (ii) $4 \times 47 \times 25 = 4 \times 25 \times 47$ | (b) commutativity under addition                    |
| (iii) $70 + 1923 + 30 = 70 + 30 + 1923$              | (c) Distributivity of multiplication over addition. |

Ans:- (i)  $\rightarrow$  (c)

(ii)  $\rightarrow$  (a)

(iii)  $\rightarrow$  (b)

### EXERCISE 2.3

Q1:- If the product of two whole number is zero. can we say that one or both of them will be zero? Justify through Examples.

Ans:- If the product of two whole number is zero. Either one of the two number is zero or both of the number is zero.

Example: If one number is zero and second number is non-zero.

$$0 \times 1 = 0$$

Example: If one number is zero and second number is also zero i.e. (both numbers are zero)

$$0 \times 0 = 0.$$

Q2:- If the product of two whole numbers is 1. can we say that one or both of them will be 1. Justify through Examples.

Ans:- If the product of two whole number is 1. Then both of them will be 1.

Example:-  $1 \times 1 = 1$

It is not possible that only one number is 1.

Example:

$$1 \times 0 = 0 \neq 1$$

$$1 \times 2 = 2 \neq 1$$

$$1 \times 3 = 3 \neq 1$$

Q3:- Observe the Pattern in the following and fill in the blanks.

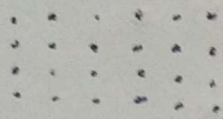
$$\begin{aligned}
 1 \times 1 &= 1 \\
 11 \times 11 &= 121 \\
 111 \times 111 &= 12321 \\
 1111 \times 1111 &= 1234321 \\
 11111 \times 11111 &= 123454321
 \end{aligned}$$

Q4:- Observe the Pattern and fill in the blanks.

$$\begin{aligned}
 1 \times 9 + 1 &= 10 \\
 12 \times 9 + 2 &= 110 \\
 123 \times 9 + 3 &= 1110 \\
 1234 \times 9 + 4 &= 11110 \\
 12345 \times 9 + 5 &= 111110 \\
 123456 \times 9 + 6 &= 1111110
 \end{aligned}$$

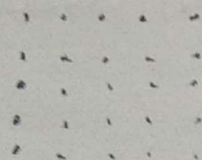
Q5:- Represent numbers from 24 to 30 according to rectangular, square or Triangular Pattern.

Ans:- 24



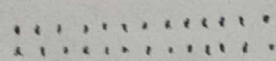
Rectangle.  
(4x6)

25



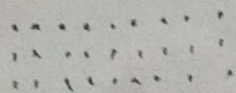
square  
(5x5)

26.



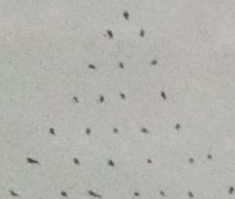
Rectangle  
(2x13)

27



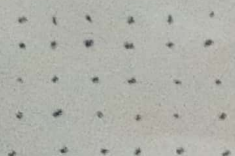
Rectangle  
(3x9)

28



Triangular

30



Rectangle  
(5x6)

Q6:- Study the following Pattern:

$$1 = 1 \times 1 = 1$$

$$1+3 = 2 \times 2 = 4$$

$$1+3+5 = 3 \times 3 = 9$$

$$1+3+5+7 = 4 \times 4 = 16$$

Hence find the sum of

(a) First 12 odd numbers:

Ans:-  $1+3+5+7+9+11+13+15+17+19+21+23 = 12 \times 12 = 144$

(b) First 50 odd numbers.

Ans:-  $50 \times 50 = 2500$

### MULTIPLE CHOICE QUESTIONS

Q1:- The smallest whole number is

- (a) 0 (b) 1 (c) 2 (d) 3

Ans:- (a) 0

Q2:- The smallest natural number is

- (a) 0 (b) 1 (c) 2 (d) 3

Ans:- (b) 1

Q3:- The successor of 38899 is

- (a) 39000 (b) 38900 (c) 39900 (d) 38800

Ans:- (b) 38900

Q4:- The Predecessor of 24100 is

- (a) 24999 (b) 24009 (c) 24199 (d) 24099

Ans:- (d) 24099

Q5:- The statement -  $1+3 = 3+1$  represents.

- (a) Closure (b) Associative  
(c) Commutative Property (d) Identity

Ans:- (c) commutative Property.

Q6:- which of the following is the additive identity?

- (a) 0 (b) 1 (c) 2 (d) 3

Ans:- (a) 0

Q7:- The multiplicative identity is

- (a) 0 (b) 1 (c) 2 (d) 3

Ans:- (b) 1

Q8:-  $15 \times 32 + 15 \times 68 =$

(a) 1400 (b) 1600 (c) 1700 (d) 1500

Ans:- (d) 1500

Q9:- The largest 4 digit number divisible by 13 is

(a) 9997 (b) 9999 (c) 9995 (d) 9991

Ans:- (a) 9997.

Q10:- The Successor of 3 digit largest number is

(a) 100 (b) 998 (c) 1001 (d) 1000

Ans:- (d) 1000.