

## Chapter : 25. GRAPHS

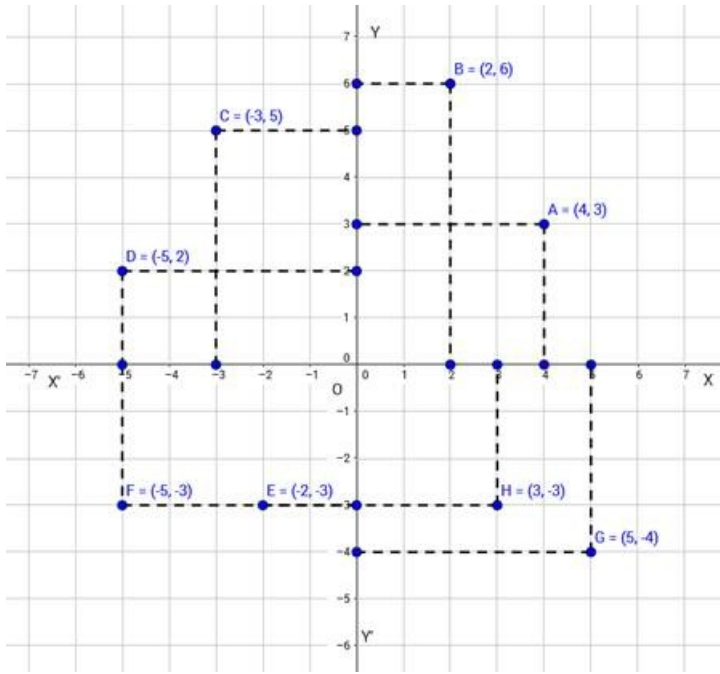
### Exercise : 25A

#### Question: 1

On a graph paper

#### Solution:

Let  $X'OX$  and  $YOY'$  be the coordinate axes.



- (i) On the  $x$ -axis, take 4 units to the right of the  $y$ -axis; and then on the  $y$ -axis, take 3 units above the  $x$ -axis. Thus, we obtain the point  $A(4,3)$
- (ii) On the  $x$ -axis, take 2 units to the right of the  $y$ -axis; and then on the  $y$ -axis, take 6 units above the  $x$ -axis. Thus, we obtain the point  $B(2,6)$
- (iii) On the  $x$ -axis, take 3 units to the left of the  $y$ -axis; and then on the  $y$ -axis, take 5 units above the  $x$ -axis. Thus, we obtain the point  $C(-3,5)$
- (iv) On the  $x$ -axis, take 5 units to the left of the  $y$ -axis; and then on the  $y$ -axis, take 2 units above the  $x$ -axis. Thus, we obtain the point  $D(-5,2)$
- (v) On the  $x$ -axis, take 2 units to the left of the  $y$ -axis; and then on the  $y$ -axis, take 3 units below the  $x$ -axis. Thus, we obtain the point  $E(-2,-3)$
- (vi) On the  $x$ -axis, take 5 units to the left of the  $y$ -axis; and then on the  $y$ -axis, take 3 units below the  $x$ -axis. Thus, we obtain the point  $F(-5,-3)$
- (vii) On the  $x$ -axis, take 5 units to the right of the  $y$ -axis; and then on the  $y$ -axis, take 4 units below the  $x$ -axis. Thus, we obtain the point  $G(5,-4)$
- (viii) On the  $x$ -axis, take 3 units to the right of the  $y$ -axis; and then on the  $y$ -axis, take 3 units below the  $x$ -axis. Thus, we obtain the point  $H(3,-3)$

### Exercise : 25B

#### Question: 1 A

Draw the gr

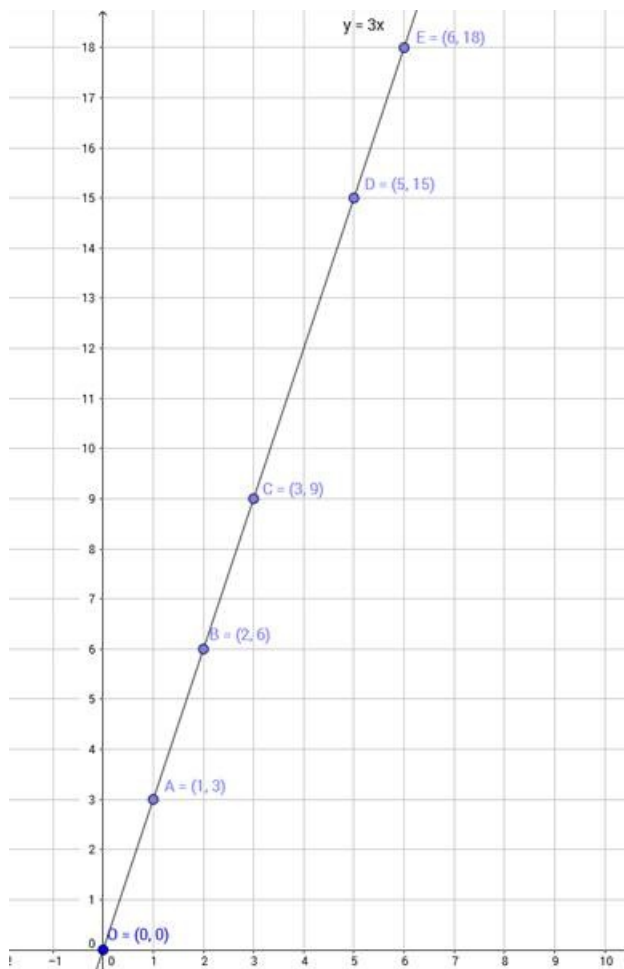
#### Solution:

The given function is  $y=3x$ . For some different values of  $x$ , the corresponding values of  $y$  are

given below:

x	0	1	2
y	0	3	6

Now, let us plot the points O(0,0), A(1,3) and B(2,6).



∴ Now, we obtain our required graph.

### Question: 1 B

From the gr

### Solution:

(i) Our point C to be plotted lies on function  $y = 3x$ .

Here, first plotting  $y = 3x$ .

Here,  $x = 3$ .

∴ Now for abscissa equal to 3, we plot the point on  $y = 3x$ , ie  $y = 3 \times 3 = 9$

Hence, the value of y is 9

(ii) Our point to be plotted lies on function  $y = 3x$ .

Here, first plotting  $y = 3x$ .

Here,  $x = 5$ .

∴ Now for abscissa equal to 5, we plot the point on  $y = 3x$ , ie  $y = 3 \times 5 = 15$

Hence, the value of y is 15

(iii) Our point to be plotted lies on function  $y = 3x$ .

∴ Here, first plotting  $y = 3x$ .

Here,  $x = 6$ .

∴ Now for abscissa equal to 6, we plot the point on  $y = 3x$ , ie  $y = 3 \times 6 = 18$

Hence, the value of  $y$  is 18

### Question: 2 A

Draw the gr

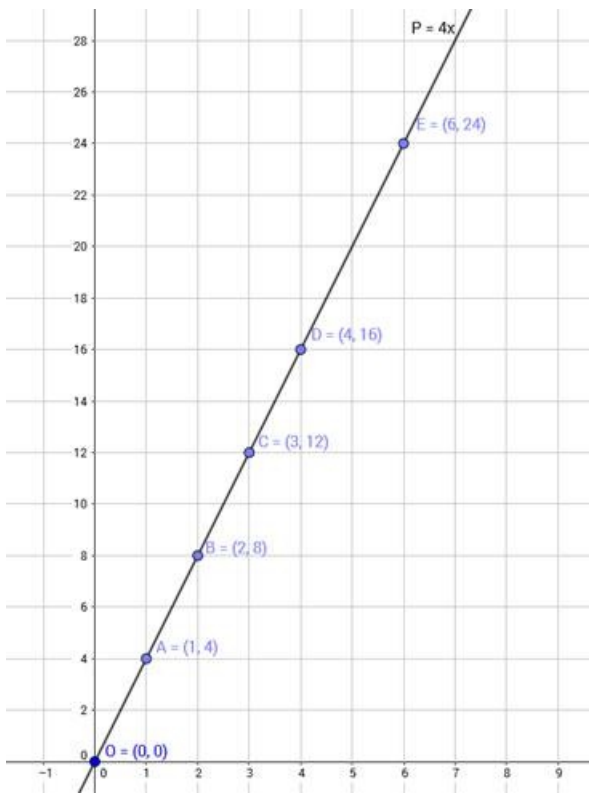
### Solution:

The given function is  $P = 4x$ . For some different values of  $x$ , the corresponding values of  $P$  are

given below:

x	0	1	2
P	0	4	8

Now let us plot the points,  $O(0,0)$ ,  $A(1,4)$  and  $B(2,8)$



∴ Now, we obtain our required graph.

### Question: 2 B

From the gr

### Solution:

(i) Our point C to be plotted lies on function  $P = 4x$ .

∴ Here, first plotting  $P = 4x$ .

Here,  $x = 3$ .

∴ Now for abscissa equal to 3, we plot the point on  $P = 4x$ , ie  $P = 4 \times 3 = 12$

Hence, the value of  $P$  is 12

(ii) Our point D to be plotted lies on function  $P = 4x$ .

∴ Here, first plotting  $P = 4x$ .

Here,  $x = 4$ .

∴ Now for abscissa equal to 4, we plot the point on  $P = 4x$ , ie  $P = 4 \times 4 = 16$

Hence, the value of P is 16

(iii) Our point E to be plotted lies on function  $P = 4x$ .

∴ Here, first plotting  $P = 4x$ .

Here,  $x = 6$ .

∴ Now for abscissa equal to 6, we plot the point on  $P = 4x$ , ie  $P = 4 \times 6 = 24$

Hence, the value of P is 24

### **Question: 3 A**

Draw the gr

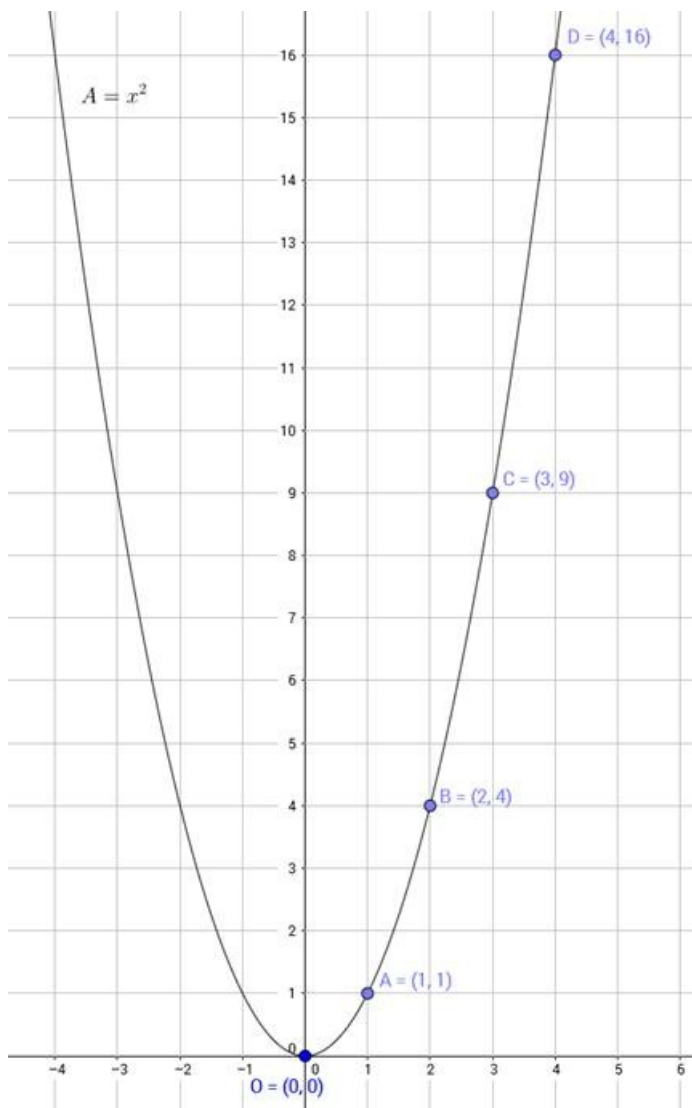
### **Solution:**

The given function is  $A = x^2$ .

For some different values of x, the corresponding values of A are given below:

x	0	1	2
A	0	1	4

Now let us plot the points, O(0,0), S(1,1) and P(2,4).



∴ Now we obtain the required graph.

### Question: 3 B

From the gr

#### Solution:

(i) Our point B to be plotted lies on function  $A = x^2$ .

∴ Here, first plotting  $A = x^2$ .

Here,  $x = 2$ .

∴ Now for abscissa equal to 2, we plot the point on  $A = x^2$ , ie  $A = 2^2 = 4$

Hence, the value of A is 4

(ii) Our point C to be plotted lies on function  $A = x^2$ .

∴ Here, first plotting  $A = x^2$ .

Here,  $x = 3$ .

∴ Now for abscissa equal to 3, we plot the point on  $A = x^2$ , ie  $A = 3^2 = 9$

Hence, the value of A is 9

(iii) Our point to be plotted lies on function  $A = x^2$ .

∴ Here, first plotting  $A = x^2$ .

Here,  $x = 4$ .

∴ Now for abscissa equal to 4, we plot the point on  $A = x^2$ , ie  $A = 4^2 = 16$

Hence, the value of A is 16

## Exercise : 25C

### Question: 1

In which of

#### Solution:

Here, given point is  $P(3,6)$ .

Both the coordinates are positive.

Hence, point P lies in first quadrant.

### Question: 2

In which of

#### Solution:

Here, given point is  $(-7,-1)$ .

Both the coordinates are negative.

Hence, given point lies in third quadrant.

### Question: 3

In which of

#### Solution:

Here, given point is  $A(2,-3)$ .

Here, abscissa of a point is positive and ordinate is negative.

Hence, given point lies in fourth quadrant.

### Question: 4

In which of

#### Solution:

Here, given point is  $Q(-4,1)$

Here, abscissa of a point is negative and ordinate is positive.

Hence, given point lies in second quadrant.

### Question: 5

The absciss

#### Solution:

We know that the abscissa of a point is its distance from the y-axis.

### Question: 6

The graph o

#### Solution:

Here, the line  $y = a$  is parallel x-axis.

### Question: 7

The equatio

#### Solution:

We know that the graph  $x = a$  is a line parallel to the y-axis.

Hence, for  $x = 0$ , line represents y axis.