[10]

*** Choose the right answer from the given options. [1 Marks Each]**

1. A point of the form (a, 0) lies on:
(A) Quadrant IV (B) Quadrant I (C) y-axis (D) x-axis

Ans. :

d. x-axis

Solution:

The given point of the form = (a, 0)
Here, x-co-ordinate = a and y-co-ordinate = 0
∴ The point of the form (a, 0) always lies on x-axis.
Thus, the point of the form (a, 0) always lies on x-axis.

2. Which point does not lie in any quadrant?
(A) (3, -4) (B) (5, 9) (C) (-3, 6) (D) (0, 3)

Ans. :

d. (0, 3)

Solution:

Since here value of x-coordinate = 0 so point lies on y-axis not in any quadrant.

3. The co-ordinates of two points A and B are (4, 3) and (-5, 3) respectively. The co-ordinates of the point at which the line segment AB meets the y-axis are:
(A) (0, 4) (B) (0, 3) (C) (3, 0) (D) (-5, 0)

Ans. :

b. (0, 3)

Solution:

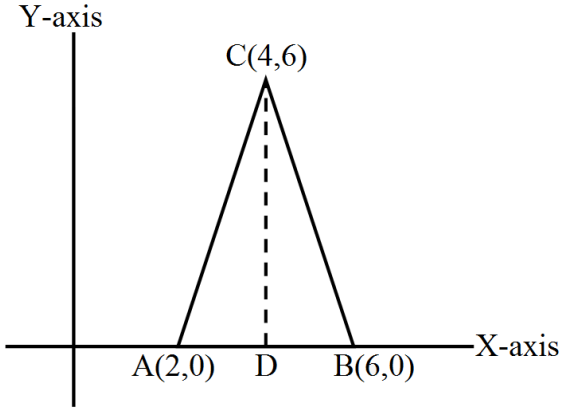
Since it meets at y-axis, so, abscissa will be zero and we have ordinate = 3 in common so,point will be (0, 3)

4. The area of the triangle formed by the points A(2, 0), B(6, 0) and C(4, 6) is:
(A) 24sq. unit (B) 12sq. unit (C) 10sq. unit (D) None of these

Ans. :

b. 12sq. unit

Solution:



Let CD be perpendicular drawn from C to AB.
The length of the perpendicular will be equal to the ordinate of point C.
⇒ CD = 6 unit
AB = 4 unit
Now, area of $\triangle \mathrm{ABC} = \frac{1}{2} \times \mathrm{Base} \times \mathrm{height}$
$\triangle \mathrm{ABC} = \frac{1}{2} \times 5 \times 6$
$12 \mathrm{sq.\ units}$

5. If P(3, 9) and Q(-3, -4), then (abscissa of P) - (ordinate of Q) is:
(A) -1 (B) 1 (C) 7 (D) -7

Ans. :

c. 7

Solution:

From the given data we have,
The abscissa of P = 3 and ordinate of Q = -4,
So, according to question,
(abscissa of P) - (ordinate of Q)
= 3 - (-4)
= 7

6. Which of the following are the signs of abscissa and ordinate of a point in quadrant?

(A) (-, +) (B) (-, -) (C) (+, +) (D) (+, -)

Ans. :

c. (+, +)

Solution:

The signs of abscissa and ordinate of a point in quadrant I are both +ve i.e. (+, +)

7. The points (-5, 2) and (2, -5) lie in the:

(A) II and IV quadrants, respectively. (B) Same quadrant. (C) IV and II quadrants, respectively. (D) II and III quadrants, respectively.

Ans. :

a. II and IV quadrants, respectively.

Solution:

In point (-5, 2), x-coordinate is negative and y-coordinate is positive, so it lies in II quadrant and in point (2, -5),
x- coordinate is positive and y-coordinate is negative, so it lies in IV quadrant.

8. Write the correct answer in the following:
If P(5, 1), Q(8, 0), R(0, 4), S(0, 5) and O(0, 0) are plotted on the graph paper, then the point(s) on the x-axis are:

(A) P and R (B) R and S (C) Only Q (D) Q and O

Ans. :

d. Q and O

Solution:

We now that, a point lies on X-axis, if its y-coordinate is zero.
So, the points on the axis are Q(8, 0) and O(0, 0).

9. If a > 0 and b > 0 then the point (a, b) lies in quadrant.

(A) IV (B) II (C) III (D) None of these.

Ans. :

b. II

Solution:

Since, x co-ordinate is negative and y co-ordinate is positive, the given point lies in Quadrant II.

10. If the perpendicular distance of a point P from the x-axis is 5 units and the foot of the perpendicular lies on the negative direction of x-axis, then the point P has.

(A) y coordinate = 5 or -5 (B) x coordinate = -5 (C) y coordinate = 5 only (D) y coordinate = -5 only

Ans. :

a. y coordinate = 5 or -5

Solution:

We know that, the perpendicular distance of a point from the X-axis gives y-coordinate of that point.
Here, foot of perpendicular lies on the negative direction of X-axis, so perpendicular distance can be measure in II quadrant or III quadrant. Hence, the point P has y-coordinate = 5 or -5.

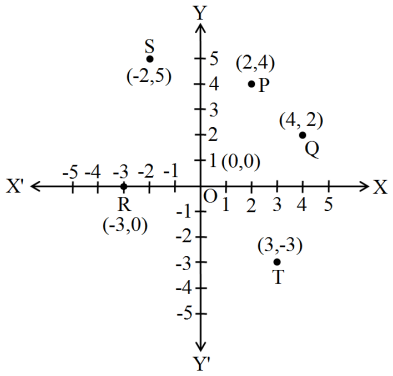
[8]

*** Answer the following short questions. [2 Marks Each]**

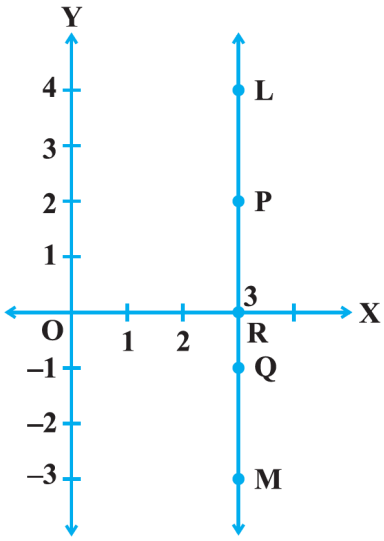
11. Plot the points (x, y) given by the following table:

x	2	4	-3	-2	3	0
y	4	2	0	5	-3	0

Ans. : On plotting the given points on the graph, we get the points P(2, 4), Q(4, 2), R(-3, 0), S(-2, 5), T(3, -3)and O(0, 0).



12. LM is a line parallel to the y-axis at a distance of 3 units:



i. What are the coordinates of the points P, R and Q?
ii. What is the difference between the abscissa of the points L and M?

Ans. : Given LM is a line parallel to the Y-axis and its perpendicular distance from Y-axis is 3 units.

i. Coordinate of point P = (3, 2) [Since, its perpendicular distance from X-axis is 2]
Coordinate of point Q = (3, -1) [Since, its perpendicular distance from X-axis is 1 in negative direction of Y-axis].
Coordinate of point R = (3, 0) [since its lies on X-axis, so its y coordinate is zero].

ii. Abscissa of point L= 3, abscissa of point M = 3
Difference between the abscissa of the points L and M = 3 - 3 = 0

13. Which of the following points lie on y-axis?
A(1, 1), B(1, 0), C(0, 1), D(0, 0), E(0, -1), F(-1, 0), S(0, 5), H(7, 0), I(3, 3).

Ans. : We know that if a point lies on the y-axis, its abscissa is 0 and its ordinate is the y-value and its coordinate are (0, y).
Hence, C(0, 1), E(0, -1), G(0, 5) are the points which lie on y-axis.

14. Which of the following points lie on the x-asis?

i. A(0, 8)
ii. B(4, 0)
iii. C(0, -3)
iv. D(-6, 0)
v. E(2, 1)
vi. F(-2, -1)
vii. G(-1, 0)
viii. H(0, 2)

Ans. : The co-ordinates of every point on the X-axis are of the form (x, 0).
Hence, following points lie on the x-axis:

ii. B(4, 0)
iv. D(-6, 0)
vii. G(-1, 0)

*** Answer the following questions. [3 Marks Each]** **[12]**

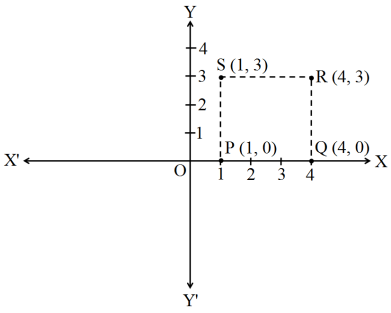
15. Find the coordinates of the point:
    i. Which lies on x and y axes both.
    ii. Whose ordinate is -4 and which lies on y-axis.
    iii. whose abscissa is 5 and which lies on x-axis.

Ans. :

i. The coordinates of the point which lies on both the axes are (0, 0).
ii. The coordinates of the point whose ordinate is -4 and which lies on y-axis are (0, -4).
iii. The coordinate of the point whose abscissa is 5 and which lies on x-axis are (5, 0).

16. Plot the points P(1, 0), Q(4, 0) and S(1, 3). Find the coordinates of the point R such that PQRS is a square.

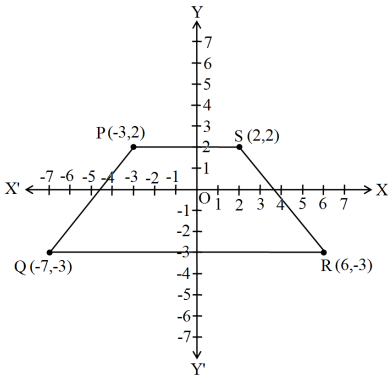
Ans. : In point P(1, 0), y-coordinate is zero, so it lies on X-axis. In point Q(4, 0), y-coordinate is zero so it lies on X-axis. In point S(1, 3), both coordinates are positive, so it lies in I quadrant. On plotting these points, we get the following graph.



Now, take a point R on the graph such that PQRS is a square. Then, all sides will be equal i.e., PQ = QR = RS = PS. So, abscissa of R should be equal to abscissa of Q i.e., 4 and ordinate of R should be equal to ordinate of S i.e., 3. Hence, the coordinates of R are (4, 3).

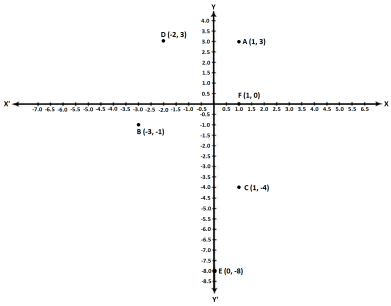
17. Plot the following points and write the name of the figure obtained by joining them in order:
P(-3, 2), Q(-7, -3), R(6, -3), S(2, 2).

Ans. : Let X' OX and Y' OY be the coordinate axes and mark point on it. Here, point P(-3, 2) lies in II quadrant, Q(-7, -3) lies in III quadrant, R(6, -3) lies in IV quadrant and S(2, 2) lies in I quadrant. Plotting the points on the graph paper, the figure obtained is trapezium PQRS.



18. Taking 0.5cm as 1 unit, plot the following points on the graph paper:
A(1, 3), B(-3, -1), C(1, -4), D(-2, 3), E(0, -8), F(1, 0)

Ans. : Here, in point 4(1, 3) both x and y-coordinates are positive, so it lies in I quadrant. In point 8(-3, -1), both x and y coordinates are negative, so it lies in III quadrant. In point C(1, -4), x-coordinate is positive and y-coordinate is negative, so it lies in IV quadrant.
In point D(-2, 3), x-coordinate is negative and y-coordinate is positive, so it lies in II quadrant. In point E(0, -8) x-coordinate is zero, so it lies on Y-axis and in point F(1, 0), y-coordinate is zero, so it lies on X-axis.
On plotting the given points, we get the following graph.



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