[25]

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

1. The distance of the point P(4, 3) from the origin is:

(A) 4 (B) 3 (C) 5 (D) 7

Ans. :

c. 5

Solution:

Point P(4, 3) and Origin O(0, 0)

Required distance $= \mathrm{OP} = \sqrt{(0-4)^2+(0-3)^2}$ (by distance formula)

$= \sqrt{16+9}$

$= \sqrt{25}$

$= 5$

2. The points (-5,3) and (3, -5) lie in the.

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

Ans. :

d. II and IV quadrants respectively.

Solution:

II and IV quadrants respectively, as in II quadrant abscissa is negative and ordinate in positive, on the other hand in IV quadrant abscissa is positive and ordinate is negative.

3. The area of the triangle formed by the points P(0,1), Q(0, 5) and R(3, 4) is:

(A) 4 sq. units (B) 8 sq. units (C) 6 sq. units (D) 16 sq. units

Ans. :

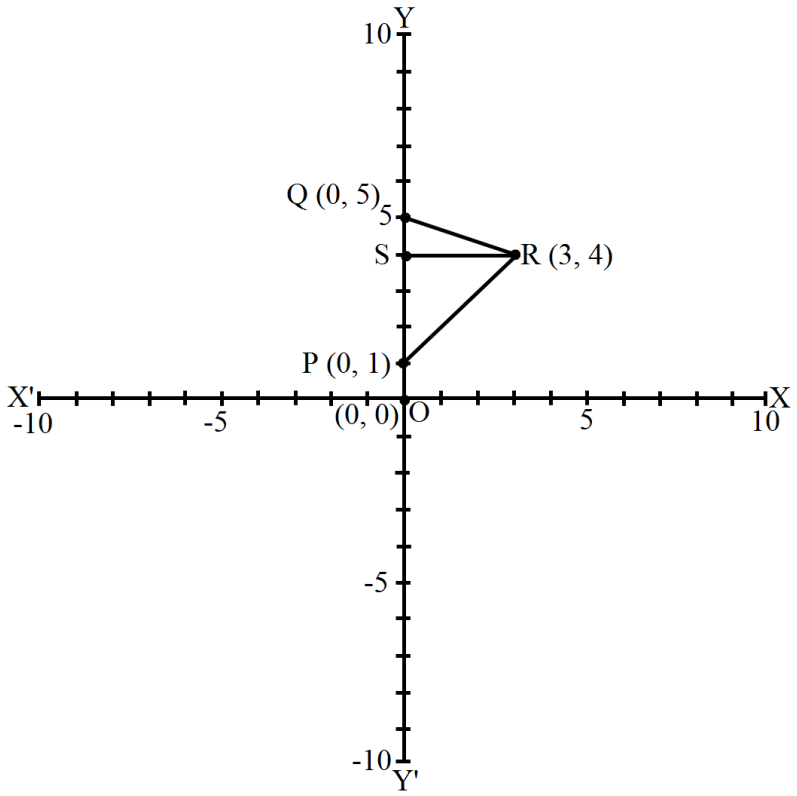
c. 6 sq. units

Solution:

Given that the points

P(0, 1), Q(0, 5) and R(3, 4) form a triangle.

We are asked to find the area of the triangle $\triangle \mathrm{PQR}$ which is shown in the figure.



Given that

OP = 1 and OQ = 5

Hence,

PQ = OQ - OP = 5 - 1 = 4 and RS = 3
By using formula,
PQR = 12 × PQ × RS
= 12 × 4 × 3
= 6 sq. units

4. P(5, -7) be a point on the graph. Draw the PM ⊥ y-axis. The coordinates of M are
(A) (-7, 0) (B) (0, -7) (C) (-7, 5) (D) (0, 0)

Ans. :
b. (0, -7)
Solution:
Here, PM Perpendicular to y-axis.
So point M lies on the y-axis, and for any point on y-axis always the value of x = 0.
So, Co-ordinate of M = (0, -7).

5. Write the correct answer in the following:
If P(-1, 1), Q(3, -4), R(1, -1), S(-2, -3) and T(-4, 4) are plotted on the graph paper, then the point(s) in the fourth quadrant are:
(A) P and T (B) Q and R (C) Only S (D) P and R

Ans. :
b. Q and R
Solution:
We know that quadrant IV consists of the all points (x, y) for which x is positive and y negative. So, the points in the fourth quadrants are Q(3, -4) and R(1, -1).

6. The perpendicular distance of a point Q(4, 7) from y-axis is:
(A) 7 units (B) 4 units (C) 11 units (D) 3 units

Ans. :
b. 4 units
Solution:
Distance of point from y-axis is x -coordinate of given point,
So, since, value of x-coordinate is 4
So, distance = 4 units

7. The signs of abscissa and ordinate of a point in quadrant III are:
(A) (-, -) (B) (+, -) (C) (-, +) (D) (+, +)

Ans. :
a. (-, -)
Solution:
The signs of abscissa and ordinate of a point in quadrant III are both -ve,
i.e, in quadrant III co-ordinates Of point is (-, -).

8. A point whose abscissa and ordinate are 2 and -5 respectively, lies in:
(A) Third quadrant. (B) Second quadrant. (C) First quadrant. (D) Fourth quadrant.

Ans. :
d. Fourth quadrant.
Solution:
As we know in the fourth coordinate abscissa is positive and ordinate is negative.

9. Points (-4, 0) and (7, 0) lie.
(A) In second quadrant. (B) In first quadrant. (C) On x-axis. (D) y-axis.

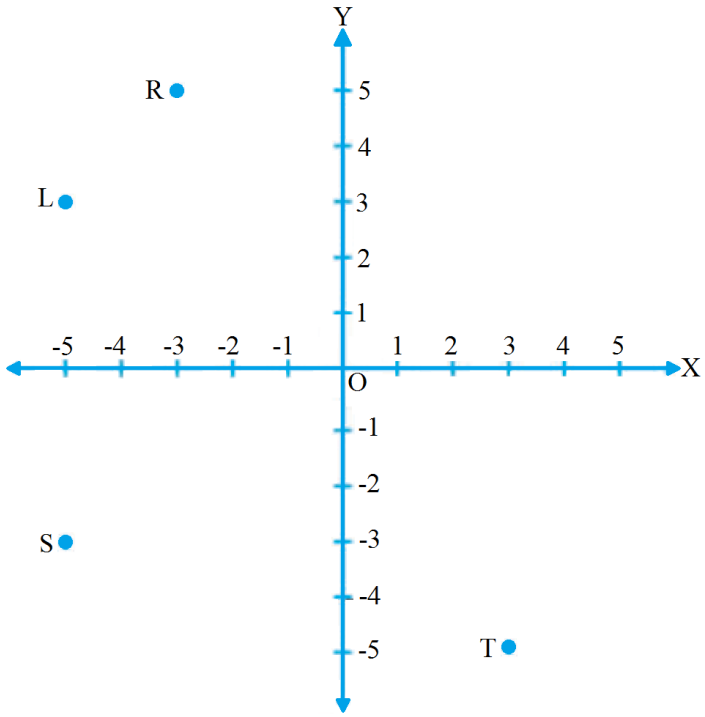
Ans. :
c. On x-axis.
Solution:
Since the ordinate of both the given points is 0, therefore both the points lie on x- axis.

10. A point is at a distance of 3 units from the x-axis and 7 units from the y-axis. Which of the following may be the co-ordinates of the point?
(A) (0, 0) (B) (4, 5) (C) (3, 7) (D) (7, 3)

Ans. :
d. (7, 3)
Solution:

We know that distance of any point from x-axis is the y-ordinate, so here y-coordinate = 3.
Now, distance of any point from y-axis is the x coordinate of the point.
So, here x co-ordinate is = 7
Thus, point will be (7, 3)

11. Write the correct answer in the following:
In the point identified by the coordinates (-5, 3) is:



(A) T (B) R (C) L (D) S

Ans. :

a. T

Solution:

Clearly, point T lies in the fourth quadrant. The distance of T from y-axis is 3 unit and from x-axis is -5 units. So, the points identified by the coordinate (-5, 3) is T.

12. The points (-5, 3) and (3, -5) lie in the.

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

Ans. :

c. II and IV quadrants respectively

Solution:

For point (-5, 3), the x co-ordinate is negative and the y co-ordinate is positive. Hence, it lies in Quadrant II.
For point (3, -5), the x co-ordinate is positive and the y co-ordinate is negative. Hence, it lies in Quadrant IV.

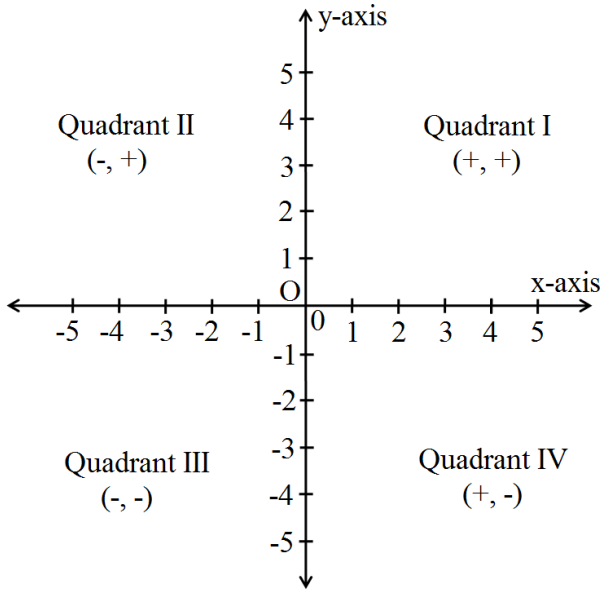
13. If $x > 0$ and $y < 0$ then the point (x, y) lies in quadrant.

(A) I (B) III (C) II (D) IV

Ans. :

d. IV

Solution:



Points of the type (+, -) lie in the 4th quadrant.
Since x > 0 and y < 0, the point (x, y) lies in quadrant IV.

14. The point which lies on the y-axis at a distance of 5 units in the negative direction of the y-axis is:
(A) (-5, 0) (B) (0, -5) (C) (5, 0) (D) (0, 5)

Ans. :

b. (0, -5)

Solution:

The point which lies on the y-axis at a distance of 5 units in the negative direction of the y-axis is (0, -5).

15. Which of the following point does not lie on the line y = 2x + 3?
(A) (-5, -7) (B) (3, 7) (C) (-1, 1) (D) (3, 9)

Ans. :

b. (3, 7)

Solution:

Let us put x = 3 in the give equation,
Then, y = 2(3) + 3
y = 6 + 3 = 9
So, the point will be (3, 9)
For x = 3, y = 9. But in the given option, y = 7
So, the given point (3, 7) will not lie on the line y = 2x + 3.

16. Points (1, -1), (2, -2), (-3, -4), (4, -5)
(A) All lie in the II quadrant. (B) All in the III quadrant. (C) All lie in the IV quadrant. (D) Do not lie in the same quadrant.

Ans. :

a. Do not lie in the same quadrant.

Solution:

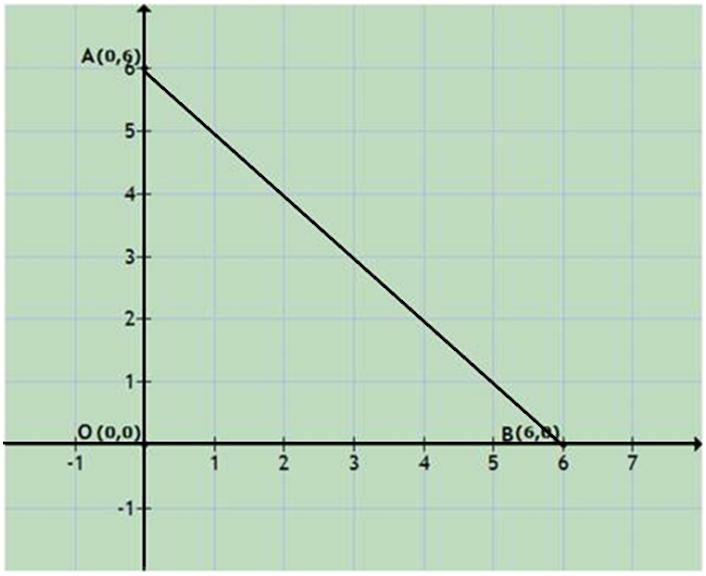
Points (1, -1), (2, -2) and (4, -5) lie in Quadrant IV, but point (-3, -4) lies in Quadrant III.
Hence, all the given points do not lie in the same quadrant.

17. The area of $\triangle AOB$ having vertices A(0, 6), O(0, 0) and B(6, 0) is:
(A) 12sq units. (B) 36sq units. (C) 18sq units. (D) 24sq units.

Ans. :

c. 18sq units.

Solution:



Clearly, $\triangle \mathrm{AOB}$ is a right-angled triangle.

$\therefore$ Area of $\triangle \mathrm{AOB} = \frac{1}{2} \times \mathrm{Base} \times \mathrm{Height}$

$= \frac{1}{2} \times \mathrm{OB} \times \mathrm{OA}$

$= \frac{1}{2} \times 6 \times 6$

= 18 square units.

18. A(-6, 3) be a point on the graph. Draw AL $\perp$ x-axis. The co-ordinates of L are:

(A) (0, -6) (B) (-6, 0) (C) (0, 0) (D) (-6, 3)

Ans. :

b. (-6, 0)

Solution:

Since AL perpendicular to x-axis,

So, point L lies on x-axis, and we know that for any point on x-axis y-ordinate is zero.

So, we have L = (-6, 0)

19. Write the correct answer in the following:

The point whose ordinate is 4 and which lies on y-axis is:

(A) (4, 0) (B) (0, 4) (C) (1, 4) (D) (4, 2)

Ans. :

b. (0, 4)

Solution:

Given ordinate of the point is 4 arid the point lies on Y-axis, so its abscissa is zero. Hence, the required point is (0, 4).

20. If P(-1, 1), Q(3, -4), R(1, -1), S(-2, -3) and T(-4, 4) are plotted on the graph paper, then the point(s) in the fourth quadrant are:

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

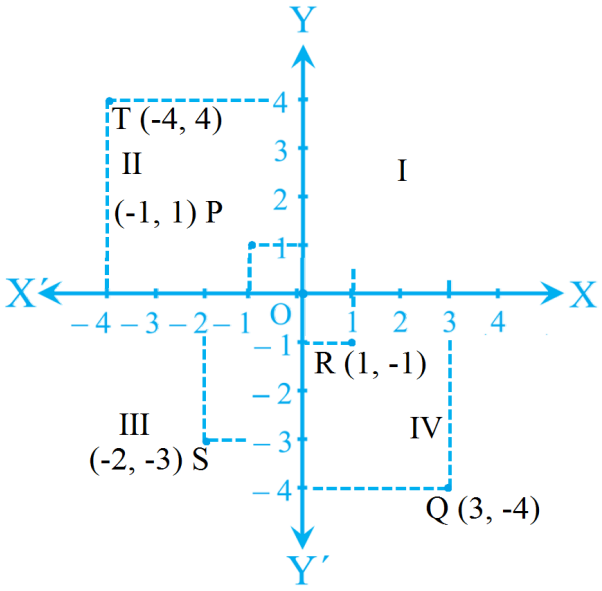
Ans. :

a. Q and R

Solution:

In point P(-1, 1), x-coordinate is -1 unit and y-coordinate is 1 unit, so it lies in ll nd quadrant. Similarly, we can plot all the points Q(3, -4), R(1, -1), S(-2, -3) and T(-4, 4), It is clear from the graph that points R and

Q lie in fourth quadrant.



21. The point whose abscissa is 4 and this point lies on the x-axis is:

(A) (0, 4) (B) (4, 4) (C) (4, 0) (D) None of these.

Ans. :

c. (4, 0)

Solution:

Since the abscissa or x-coordinate of a point is 4 and this point lies on the x-axis. And the ordinate or y-coordinate of a point lying on the x-axis is 0.

Therefore the coordinate of the point is (4, 0).

22. Point (-10, 0) lies.

(A) On the negative direction of the y-axis. (B) In the fourth quadrant. (C) In the third quadrant. (D) On the negative direction of the X-axis.

Ans. :

d. On the negative direction of the X-axis.

Solution:

In point (-10, 0) y-coordinate is zero, so it lies on X-axis and its x-coordinate is negative, so the point (-10, 0) lies on the X-axis in the negative direction.

23. Which of the following points lie on the line y = 3x – 4?

(A) (4, 12) (B) (5, 15) (C) (2, 2) (D) (3, 9)

Ans. :

c. (2, 2)

Solution:

When we put x = 2 in the given equation,

Then, y = (3 × 2)–4

y = 6 - 4 = 2, so point is (2, 2)satisfied the given equation,

Hence point (2, 2) will lie on the line y = 3x - 4

24. The points A(-2,3), B(-2,-4) and C(5,-4) are the vertices of the square ABCD, then the co-ordinates of the vertex D are:

(A) (5, 3) (B) (3, 3) (C) (0, 0) (D) (3, -4)

Ans. :

a. (5, 3)

Solution:

Let A(-2, 3), B(-2, 4), C(5, -4) be the three vertices of the square ABCD.

Clearly, abscissa of D = abscissa of C = 5

And,ordinate of D = ordinate of A = 3

So, the coordinates of the 4th vertex of ABCD i.e. D are (5, 3).

25. The area of a triangle whose vertices are (0, 0), (4, 0) and (0, 6) is:

(A) 36 sq. units (B) 6 sq. units (C) 12 sq. units (D) 24 sq. units

Ans. :

c. 12 sq. units

Solution:

We have a point (0, 0) i.e; origin.

A point (4, 0) whose y-coordinate is zero.

So, this point is having 4 units in x-axis = base (let) A point (0, 6) i.e. 6 units in y-axis = height of a triangle so, these point forms a right angle triangle.

So, Area of a triangle $= \frac{1}{2} \times \text{Base} \times \text{Height}$

Area of a triangle $= \frac{1}{2} \times 6 \times 4 = 12 \text{ sq.units}.$

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