

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

[10]

1. If $O(0, 0)$, $A(3, 0)$, $B(3, 4)$, $C(0, 4)$ are four given points then the figure OABC is a:

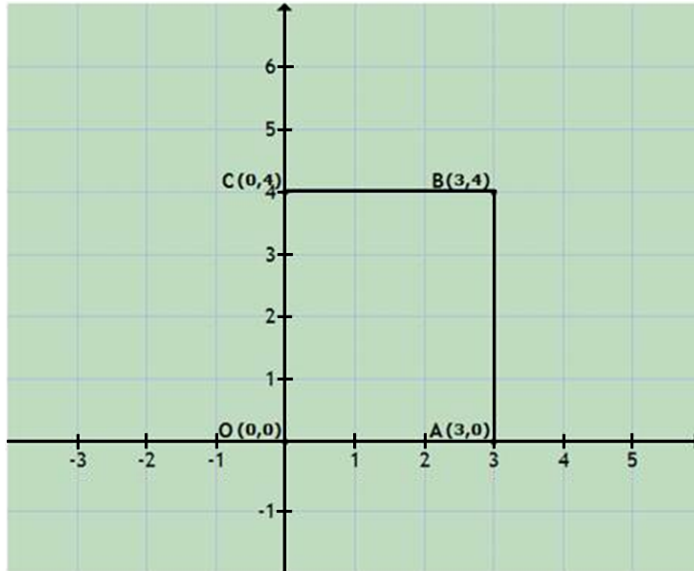
- (A) Square. (B) Rectangle. (C) Trapezium. (D) Rhombus.

Ans. :

- b. Rectangle.

Solution:

By plotting the given points, we find that figure OABC is a rectangle.



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

- (A) I Quadrant. (B) III Quadrant. (C) II Quadrant. (D) IV Quadrant.

Ans. :

- c. II Quadrant.

Solution:

Here, $x < 0$ (i.e. -ve) and $y > 0$, (i.e. +ve)

So in 2nd quadrant value of (x, y) is $(-, +)$.

So the given point will lie in 2nd quadrant.

3. The distance of the point $(-3, -2)$ from x-axis is:

- (A) $\sqrt{13}$ units (B) 5 units (C) 3 units (D) 2 units

Ans. :

- d. 2 units

Solution:

Distance from x-axis is they, co-ordinate of other point So ,here distance = 2,

4. The point whose ordinate is 6 and which point lies on the y-axis?

- (A) $(6, 0)$ (B) $(6, 6)$ (C) $(0, 6)$ (D) None of these.

Ans. :

- c. $(0, 6)$

Solution:

Since the ordinate or y-coordinate of a point is 6 and this point lies on y-axis.

And the abscissa or x-coordinate of a point lying on y-axis is 0.

Therefore, the coordinate of the point is $(0, 6)$.

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

5. Write the correct answer in the following:

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

Ans. :

- d. y coordinate = 5 or -5

Solution:

We do know that perpendicular distance of a point from the X-axis 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

6. If A(2, 3) and B(-3, 4), then (abscissa of A) - (abscissa of B) is:

(A) 5 (B) -1 (C) -5 (D) 1

Ans. :

- a. 5

Solution:

Here we have, the abscissa of A = 2 and abscissa of B = -3.

So, according to question,

(abscissa of A) - (abscissa of B)

$$= 2 - (-3)$$

$$= 5$$

7. Write the correct answer in the following:

The points whose abscissa and ordinate have different signs will lie in:

(A) I and II quadrants. (B) II and III quadrants. (C) I and III quadrants. (D) II and IV quadrants.

Ans. :

- d. II and IV quadrants.

Solution:

The points whose abscissa and ordinate have different signs will be of the form (-x, y) or (x, -y) and these points will lie in II and IV quadrants.

8. The area of $\triangle AOB$ having vertices A(0, 6), O(0, 0) and B(6, 0) is:

(A) 36 sq units (B) 18 sq units (C) 24 sq units (D) 12 sq units

Ans. :

- b. 18 sq units

Solution:

When we plot the given points in the graph paper then,

is the right angle triangle, where

OB = Base = 6 units

Height of triangle = OA = 6 units

$$\therefore \text{Area of } \triangle AOB = \frac{1}{2} \times OA \times OB$$

$$\Rightarrow \text{Area of } \triangle AOB = \frac{1}{2} \times 6 \times 6$$

$$\Rightarrow \text{Area of } \triangle AOB = \frac{1}{2} \times 36$$

$$\Rightarrow \text{Area of } \triangle AOB = 18 \text{ square units}$$

9. The abscissa and ordinate of the point with Co-ordinates (8, 12) is:

(A) Abscissa 12 and ordinate 8 (B) Abscissa 4 and ordinate 20 (C) Abscissa 8 and ordinate 12 (D) Abscissa 0 and ordinate 20

Ans. :

- c. Abscissa 8 and ordinate 12

Solution:

In the Cartesian plane, any point P is written as p(x, y), where X co-ordinate is called the abscissa of point p and Y co-ordinate is called ordinate of point p.

So, here abscissa will be equal to 8 and ordinate = 12

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

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

Ans. :

- a. IV Quadrant.

Solution:

Since, $x > 0$ i.e, x is +ve,

$y < 0$ i.e, y is -ve,

Recall that (+, +) lies in I quadrant, (-, +) lies in II quadrant, (-, -) lies in III quadrant, (+, -) lies in IV quadrant.

So, (x, y) lies in IV quadrant.

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

[8]

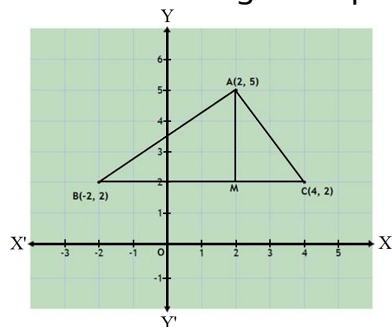
11. In which quadrant or on which axis each of the following points lie?

$(-3, 5), (4, -1), (2, 0), (2, 2), (-3, -6)$

Ans. : In point $(-3, 5)$, x-coordinate is negative and y-coordinate is positive, so it lies in II quadrant. In point $(4, -1)$, x-coordinate is positive and y-coordinate is negative, so it lies in IV quadrant. In point $(2, 0)$, x-coordinate is positive and y-coordinate is zero, so it lies on X-axis. In point $(2, 2)$, x-coordinate and y-coordinate both are positive, so its lies in I quadrant. In point $(-3, -6)$, x-coordinate and y-coordinate both are negative, so its lies in III quadrant.

12. Plot the points $A(2, 5)$, $B(-2, 2)$ and $C(4, 2)$ on a graph paper. Join AB, BC and AC. Calculate the area of $\triangle ABC$.

Ans. : The given points are plotted on the graph paper as follows:



Draw $AM \perp BC$. Area of $\triangle ABC = \frac{1}{2} \times \text{Base} \times \text{Height} = \frac{1}{2} \times BC \times AM$

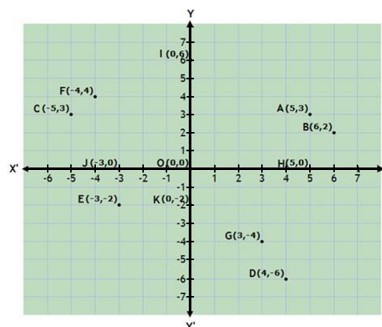
$$= \frac{1}{2} \times 6 \times 3 = 9 \text{ square units.}$$

13. Three vertices of a rectangle ABCD are $A(3, 1)$, $B(-3, 1)$ and $C(-3, 3)$. plot these points on a graph paper and find the coordinates of the fourth vertex D. Also find the area of rectangle ABCD.

Ans. : Let $A(3, 1)$, $B(-3, 1)$ and $C(-3, 3)$ be three vertices of a rectangle ABCD. Let the y-axis cut the rectangle ABCD at the points P and Q respectively. **(Image)** Abscissa of D = Abscissa of A = 3. Ordinate of D = ordinate of C = 3. \therefore coordinates of D are $(3, 3)$. $AB = (BP + PA) = (3 + 3) \text{ units} = 6 \text{ units}$. $BC = (OQ - OP) = (3 - 1) \text{ units} = 2 \text{ units}$. $\text{Ar}(\text{rectangle ABCD}) = (AB \times BC) = (6 \times 2) \text{sq. units} = 12 \text{sq. units}$ Hence, the area of rectangle ABCD 12 square units.

14. On the plane of a graph paper draw $X'OX$ and YOY' as coordinate axes and plot each of the following points.

- i. $A(5, 3)$
- ii. $B(6, 2)$
- iii. $C(-5, 3)$
- iv. $D(4, -6)$
- v. $E(-3, -2)$
- vi. $F(-4, 4)$
- vii. $G(3, -4)$
- viii. $H(5, 4)$
- ix. $I(0, 6)$
- x. $J(-3, 0)$
- xi. $K(0, -2)$
- xii. $O(0, 0)$



Ans. : The given points are plotted as follows:

► Answer the following questions. [3 Marks Each]

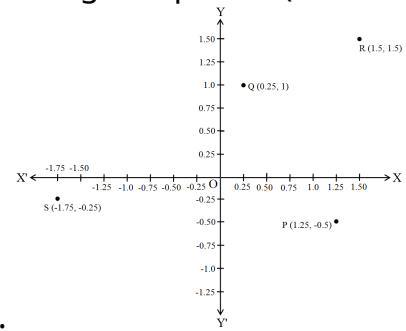
[12]

15. Plot the points (x, y) given by the following table. Use scale $1 \text{ cm} = 0.25 \text{ units}$.

x	1.25	0.25	1.5	-1.75

y	-0.5	1	1.5	-0.25
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Ans. : Let $X'OX$ and $X' OY$ be the coordinate axes. Plot the given points $(1.25, -0.5)$,

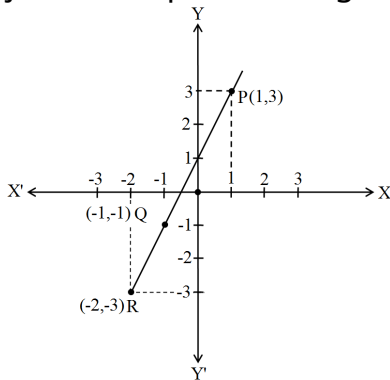


$(0.25, 1)$, $(1.5, 1.5)$ and $(-1.75, -0.25)$ on the graph paper.

16. Plot the following points and check whether they are collinear or not:

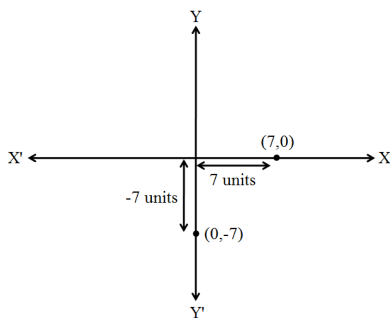
$(1, 3)$, $(-1, -1)$, $(-2, 3)$

Ans. : Plotting the points $P(1, 3)$, $Q(-1, -1)$ and $R(-2, -3)$ on the graph paper and join these points, we get a straight line. Hence, these points are collinear.

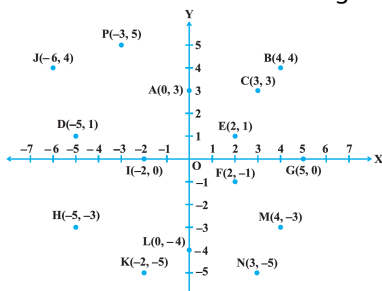


17. A point lies on the x-axis at a distance of 7 units from the y-axis. What are its coordinates? What will be the coordinates if it lies on y-axis at a distance of -7 units from x-axis?

Ans. : Given, point lies on the positive direction of X-axis, so its y-coordinate will be zero and it is at a distance of 7 units from the X-axis, so its coordinates are $(7, 0)$. If it lies on negative direction of X-axis, then its x-coordinate will be zero and its distance from X-axis is 7 units, so its coordinates are $(0, -7)$.



18. From the answer the following:



- Write the points whose abscissa is 0
- Write the points whose ordinate is 0
- Write the points whose abscissa is -5

Ans. :

- i. Clearly, the distance of points A, L and O from y-axis is 0. So, A(0, 3), L(0, -4) and O(0, 0) are the points whose abscissa is 0.
- ii. Clearly, the distance of points G, I and O from x-axis is 0. So, G(5, 0), I(-2, 0) and O(0, 0) are the points whose ordinate is 0.
- iii. Clearly, the distance of points H and D from y-axis is 5 units and both lie in second and third quadrants respectively. So, H(-5, -3) and D(-5, 1) are the points whose abscissa is -5.
