11. Co-ordinate Geometry

Exercise 11.1

1. Question

Plot the following points on the graph paper:

(i) (2, 5) (ii) (4, -3)

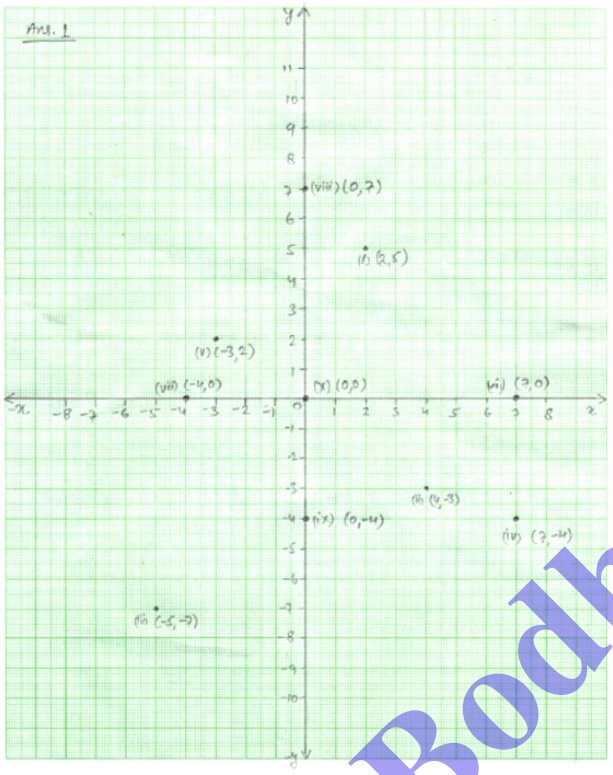
(iii) (-5, -7) (iv) (7, -4)

(v) (-3, 2) (vi) (7, 0)

(vii) (-4, 0) (viii) (0, 7)

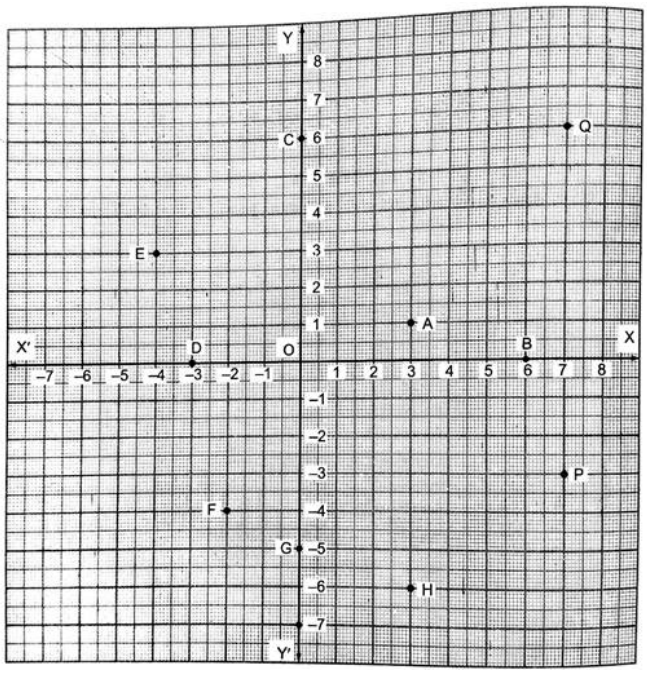
(ix) (0, -4) (x) (0, 0)

Answer



2. Question

Write the coordinates of each of the following points marked in the graph paper:



Answer

A (3, 1)

From Point A draw a perpendicular to x-axis we get 3 and perpendicular to y-axis we get 1. Therefore co-ordinates of point A is (3, 1).

B(6, 0)

Since Point B lies on x-axis six places away from origin. Therefore co-ordinates of point B is (6, 0).

C(0, 6)

Since Point C lies on y-axis six places away from origin. Therefore co-ordinates of point C is (0, 6).

D(-3, 0)

Since Point D lies on x-axis three places away from origin on left side. Therefore co-ordinates of point D is (-3, 0).

E(-4, 3)

From Point E draw a perpendicular to x-axis we get-4 and perpendicular to y-axis we get 3. Therefore co-ordinates of point E is (-4, 3).

F(-2, -4)

From Point F draw a perpendicular to x-axis we get-2 and perpendicular to y-axis we get -4. Therefore co-ordinates of point F is (-2, -4).

G(0, -5)

Since Point G lies on y-axis 5 places away from origin in the downward disrection since value of the co-ordinate is negative. Therefore co-ordinates of point G is (0, -5).

H(3, -6)

From Point H draw a perpendicular to x-axis we get 3 and perpendicular to y-axis we get -6. Therefore co-ordinates of point H is (3, -6).

P(7, -3)

From Point P draw a perpendicular to x-axis we get 7 and perpendicular to y-axis we get -3. Therefore co-ordinates of point P is (7, -3).

CCE - Formative Assessment

1. Question

The point of intersect of the coordinate axes is

A. ordinate

B. abscissa

C. quadrant

D. origin

Answer

The point where coordinate axes intersect is known as origin O(0, 0).

2. Question

The abscissa and ordinate of the origin are

A. (0, 0)

B. (1, 0)

C. (0, 1)

D. (1, 1)

Answer

The point where coordinate axes intersect is known as origin The abscissa and the ordinate of Origin are (0, 0).

3. Question

The measure of the angle between the coordinate axes is

A. 0°

B. 90°

C. 180°

D. 360°

Answer

Coordinate axes intersect each other at 90° or coordinate axes are perpendicular to eact other.

4. Question

A point whose abscissa and ordinate are 2 and -5 respectively lies in

A. First quadrant

B. Second quadrant

C. Third quadrant

D. Fourth quadrant

Answer

As we know in the fourth coordinate abscissa is positive and ordinate is negative.

5. Question

Points (-4, 0) and (7, 0) lie

A. on *x*-axis

B. *y*-axis

C. a line parallel to *y*-axis

D. a line parallel to *x*-axis

Answer

Since the ordinate of both the given points is 0, therefore both the points lie on $x - axis.$

6. Question

The ordinate of any point on x-axis is

A. 0

B. 1

C. -1

D. any number

Answer

The ordinate of any point on x-axis is always zero. This means that this point hasn't covered at any distance on y-axis.

7. Question

The abscissa of any point on *y*-axis is

A. 0

B. 1

C. -1

D. any number

Answer

The abscissa of any point on y-axis is always zero. This means that this point hasn't covered at any distance on x-axis.

8. Question

The abscissa of a point is positive in the

A. First and Second quadrant

B. Second and Third quadrant

C. Third and Fourth quadrant

D. Fourth quadrant

Answer

We knw that abscissa is always positive in first and fourth coordinate and ordinate is always positive in first and second coordinate.

9. Question

A point whose abscissa is -3 and ordinate 2 lies in

A. First quadrant

B. Second quardant

C. Third quadrant

D. Fourth quadrant

Answer

As we know that abscissa is negative in second and third coordinate and ordinate is positive in first and second coordinate. Therefore the given point -3, 2 lies in second coordinate.

10. Question

Two points having same abscissa but different ordinates lie on

A. *x*-axis

B. *y*-axis

C. a line parallel to *y*-axis

D. a line parallel to *x*-axis

Answer

Two points having same abscissa but different ordinate always amke a line which is parallel to y-axis.

11. Question

The perpendicular distance of the point *P*(4,3) from *x*-axis is

A. 4

B. 3

C. 5

D. none of these

Answer

The perpendicular distance of any point from x-axis is always equal to the value of ordinate.

12. Question

The perpendicular distance of the point *P*(4,3) from *y*-axis is

A. 4

B. 3

C. 5

D. none of these

Answer

The perpendicular distance of any point from y-axis is always equal to the value of abscissa.

13. Question

The distance of the point *P*(4,3) from the origin is

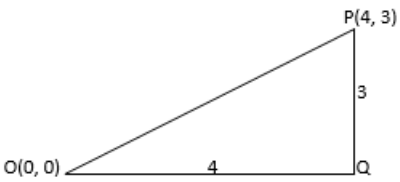
A. 4

B. 3

C. 5

D. 7

Answer



Using Pythagorous theorem: $OP^2 = OQ^2 + QP^2$

$OP^2 = 4^2 + 3^2$

$OP^2 = \sqrt{16+9} = 5$

14. Question

The area of the triangle formed by the points $A(2,0)$, $B(6,0)$ and $C(4,6)$ is

A. 24 sq. units

B. 12 sq. units

C. 10 sq. units

D. none of these

Answer

If (x_1, y_1), (x_2, y_2), (x_3, y_3) (x_1, y_1) (x_2, y_2), (x_3, y_3) are the vertices of a triangle then its area is given by

Area $= |1/2\ (x_1(y_2 - y_3) + x_2\ (y_3 - y_1\ ) + x_3\ (y_1 - y_2\ ))|$

Area $= \frac{1}{2}[(2(0-6)+6(6-0)+4(0-0)]$

$\Rightarrow \frac{1}{2}\ [-12+36+0]$

$\Rightarrow$ 12 sq. units

15. Question

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

A. 16 sq. units

B. 8 sq. units

C. 4 sq. units

D. 6 sq. Units

Answer

If (x_1, y_1), (x_2, y_2), (x_3, y_3) (x_1, y_1) (x_2, y_2), (x_3, y_3) are the vertices of a triangle then its area is given by

Area $= |1/2\ (x_1(y_2 - y_3) + x_2\ (y_3 - y_1\ ) + x_3\ (y_1 - y_2\ ))|$

Area $= \frac{1}{2}[(0(5-4)+0(4-1)+3(1-5)]$

$\Rightarrow |\frac{1}{2}\ [-12]|$

$\Rightarrow$ 6 sq. units