

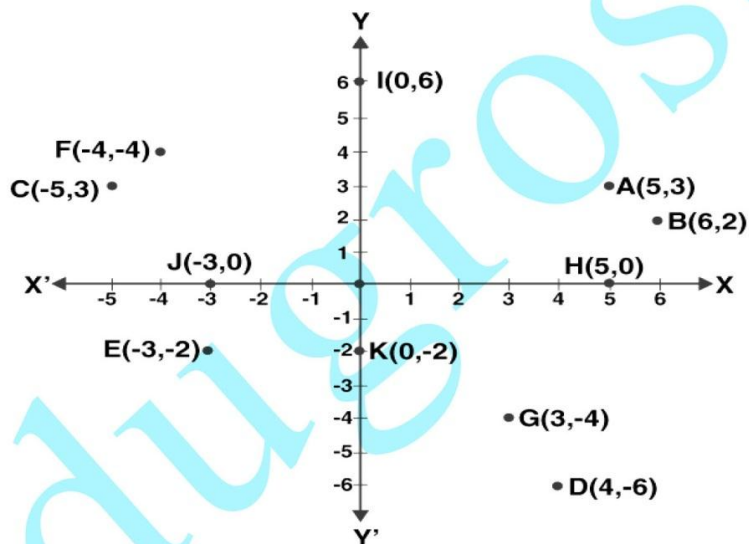
RS Aggarwal Solutions for Class 9 Maths Chapter 5 –
Coordinate GeometryEXERCISE 5

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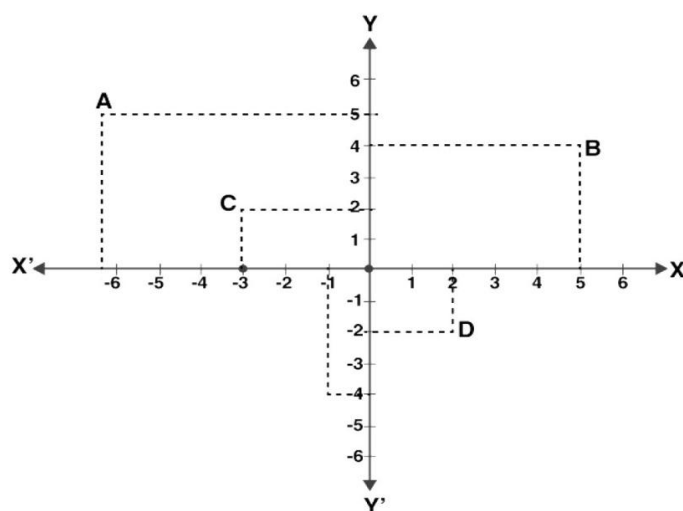
1. On the plane of a graph paper draw $X'OX$ and YOY' as coordinate axes and plot each of the following points.

- (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, 0)
- (ix) I (0, 6)
- (x) J (-3, 0)
- (xi) K (0, -2)
- (xii) O (0, 0)

Solution:



2. Write down the coordinates of each of the following points A, B, C, D and E.

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From the coordinates draw perpendiculars on x-axis namely AF, BG, CH, DI and EJ

For point A

Distance from y-axis = OF = -6 units

Distance from x-axis = AF = 5 units

Therefore, the coordinates of point A are (-6, 5)

For point B

Distance from y-axis = OG = 5 units

Distance from x-axis = BG = 4 units

Therefore, the coordinates of point B are (5, 4)

For point C

Distance from y-axis = OH = -3 units

Distance from x-axis = HC = 2 units

Therefore, the coordinates of point C are (-3, 2)

For point D

Distance from y-axis = OI = 2 units

Distance from x-axis = ID = -2 units

Therefore, the coordinates of point D are (2, -2)

For point E

Distance from y-axis = OJ = -1 unit

Distance from x-axis = JE = -4 units

Therefore, the coordinates of point E are (-1, -4)

3. For each of the following points, write the quadrant in which it lies.

(i) (-6, 3)

(ii) (-5, -3)

(iii) (11, 6)

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- (iv) (1, -4)
- (v) (-7, -4)
- (vi) (4, -1)
- (vii) (-3, 8)
- (viii) (3, -8)

Solution:

- (i) For the coordinate (-6, 3)
-6 which is the x-coordinate is negative and 3 which is the y-coordinate is positive.
Therefore, (-6, 3) lies in the II quadrant.
- (ii) For the coordinate (-5, -3)
-5 which is the x-coordinate is negative and -3 which is the y-coordinate is negative.
Therefore, (-5, -3) lies in the III quadrant.
- (iii) For the coordinate (11, 6)
11 which is the x-coordinate is positive and 6 which is the y-coordinate is positive.
Therefore, (11, 6) lies in I quadrant.
- (iv) For the coordinate (1, -4)
1 which is the x-coordinate is positive and -4 which is the y-coordinate is negative.
Therefore, (1, -4) lies in the IV quadrant.
- (v) For the coordinate (-7, -4)
-7 which is the x-coordinate is negative and -4 which is the y-coordinate is negative.
Therefore, (-7, -4) lies in the III quadrant.
- (vi) For the coordinate (4, -1)
4 which is the x-coordinate is positive and -1 which is the y-coordinate is negative.
Therefore, (4, -1) lies in the IV quadrant.
- (vii) For the coordinate (-3, 8)
-3 which is the x-coordinate is negative and 8 which is the y-coordinate is positive.
Therefore, (-3, 8) lies in the II quadrant.
- (viii) For the coordinate (3, -8)
3 which is the x-coordinate is positive and -8 which is the y-coordinate is negative.
Therefore, (3, -8) lies in the IV quadrant.

4. Write the axis on which the given point lies.

- (i) (2, 0)
- (ii) (0, -5)
- (iii) (-4, 0)
- (iv) (0, -1)

Solution:

- (i) Since the point (2, 0) is of the form (x, 0) it lies on the x-axis.
- (ii) Since the point (0, -5) is of the form (0, y) it lies on the y-axis.

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(iii) Since the point $(-4, 0)$ is of the form $(x, 0)$ it lies on the x-axis.

(iv) Since the point $(0, -1)$ is of the form $(0, y)$ it lies on the y-axis.

5. Which of the following points lie on the x-axis?

- (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 $(0, -2)$

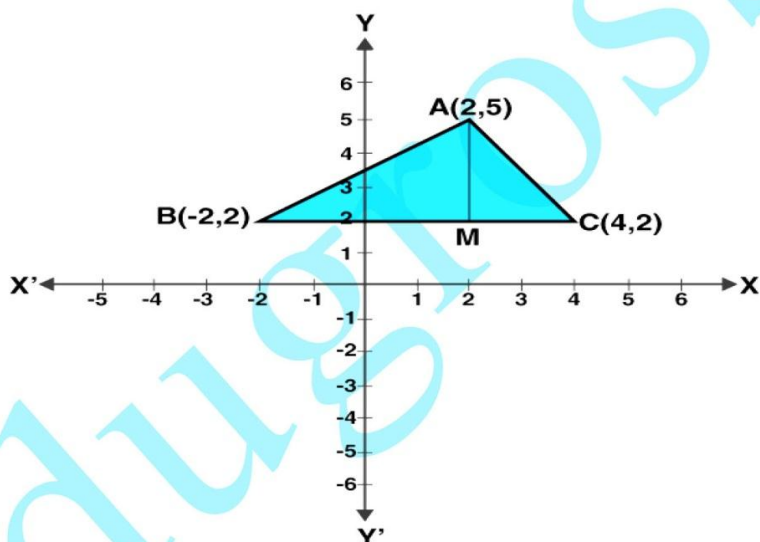
Solution:

The points which lie on the x-axis are of the form $(x, 0)$

Therefore, the points which lie on the x-axis are B $(4, 0)$, D $(-6, 0)$ and G $(-1, 0)$.

6. 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 $\triangle ABC$.

Solution:



Construct a line AM which is perpendicular to BC

$$\begin{aligned} \text{Area of } \triangle ABC &= \frac{1}{2} \times b \times h \\ &= \frac{1}{2} \times BC \times AM \end{aligned}$$

So on further calculation we get

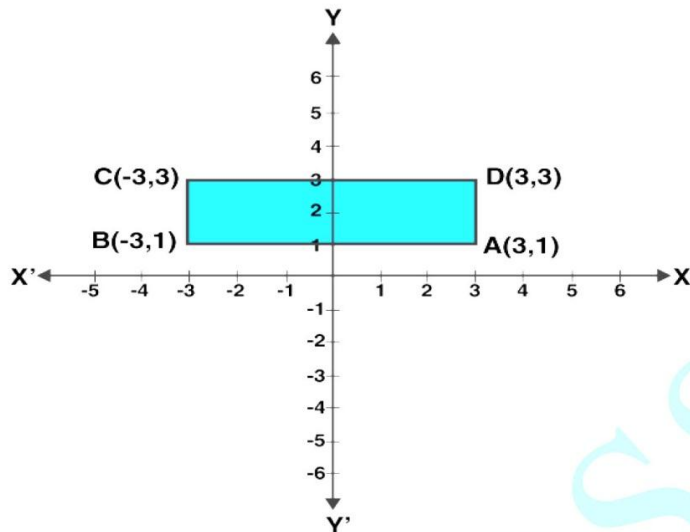
$$\text{Area of } \triangle ABC = \frac{1}{2} \times 6 \times 3$$

$$\text{Area of } \triangle ABC = 9 \text{ sq. units}$$

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

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Solution:



From the graph

The coordinates of point D are (3, 3)

Area of rectangle ABCD = $l \times b$ $= AB \times BC$

On further calculation we get

Area of rectangle ABCD = 6×2

Area of rectangle ABCD = 12 sq. units