

**ST. KAREN'S SECONDARY SCHOOL**

**SUB – MATHS**

**TOPIC – COORDINATE GEOMETRY**

**CLASS – 9**

**CONTENT AND ASSIGNMENT 1**

**DATE -29.7.20**

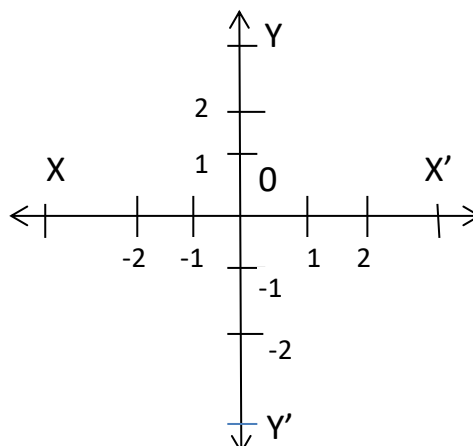
**COORDINATE GEOMETRY** – The branch of mathematics in which we locate the position of a point with the help of coordinate axes is known as coordinate geometry.

In coordinate geometry we solve the problem related to geometry through algebra by using coordinate system.

**CARTESIAN PLANE** – A plane on which we describe the position of a point with the help of coordinate axes is known as Cartesian plane or coordinate plane.

**COORDINATE AXES** - Two intersecting straight lines which are perpendicular to each other in a Cartesian plane are called coordinate axes.

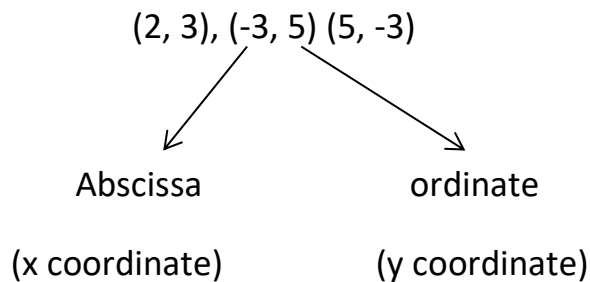
The plural of axis is axes.



Horizontal Line X'OX is called is X axis.

Vertical line YOY' is called Y axis.

**COORDINATE** – A set of values which helps to show the exact position of a point with the help of coordinate axes is called coordinate.



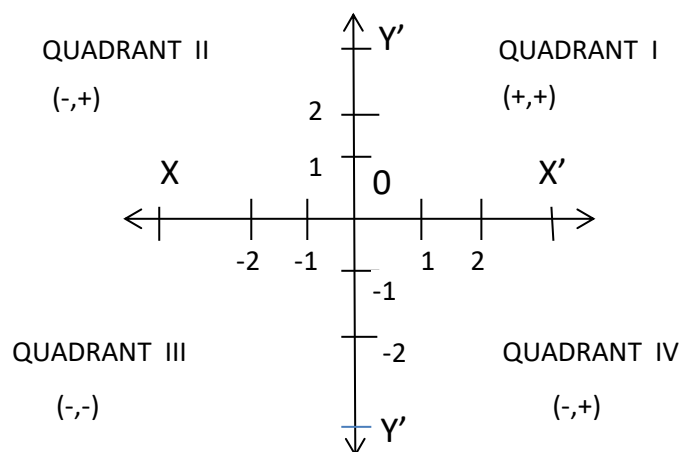
**ORIGIN** – The intersection point of X and Y axis is called origin. It's coordinate is (0,0).

**ABSCISSA** – The distance of any point from Y axis called Abcissa or x coordinate.

**ORDINATE** – The distance of any point from X axis is called ordinate or y coordinate.

For example, if point is (2, 3), then this point is at distance of 2 unit from Y axis and at distance of 3 unit from X axis.

**QUADRANT** – X and Y axes divide the Cartesian plane into four parts. Each part is called quadrant.



## **ASSIGNMENT 1**

**1.** For each of the following points, write the quadrant/axis in (or on) which it lies-

- (i)(-6, 3)              (ii)(-5,-3)              (iii)(0, 6)              (iv)(-4, 0)  
(v)(2,-3)              (vi)(2, 5)

**2.** What is the name of horizontal and vertical lines drawn to determine the position of any point in the Cartesian plane?

**3.** What is the name of each part of the plane formed by two horizontal and vertical lines?

**4.** Write the name of the point where X axis and Y axis meet.

**5.** Write the coordinate of the point which lies on the Y axis at a distance of 5 units in the negative direction of the Y axis.

**6.** Write the distance of the following points from the Y axis –

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

**7.** Write the distance of the following points from X axis –

- (i) (-4, -6)              (ii)(5, 4)

**ACTIVITY** – Draw a plan of the seating in your classroom, pushing all the desk together. Represent each desk by square. In each square write, write the name of the student occupying the desk. Describe the position of each student in class room as coordinate by using the column and rows in which she/he sits.

**FOR EXPLANATION OF THE TOPIC, FOLLOW THE FOLLOWING LINK –**

**[https://drive.google.com/file/d/1Gr\\_Yqis-M9x7ccVrzGxZd8TdO9fZ6uKF/view?usp=drivesdk](https://drive.google.com/file/d/1Gr_Yqis-M9x7ccVrzGxZd8TdO9fZ6uKF/view?usp=drivesdk)**

**St. Karen's Secondary School**

**Sub : Mathematics**

**Ch : 3 (Coordinate Geometry)**

**Class : 9**

**Date : 31/7/20**

**Content : 2**

**Subtopic : Plotting point in the plane when its co-ordinates are given**

In the present section, we shall see how we can locate a point in the co-ordinate plane when its co-ordinates are given. This process is called plotting the point in a co-ordinate plane.

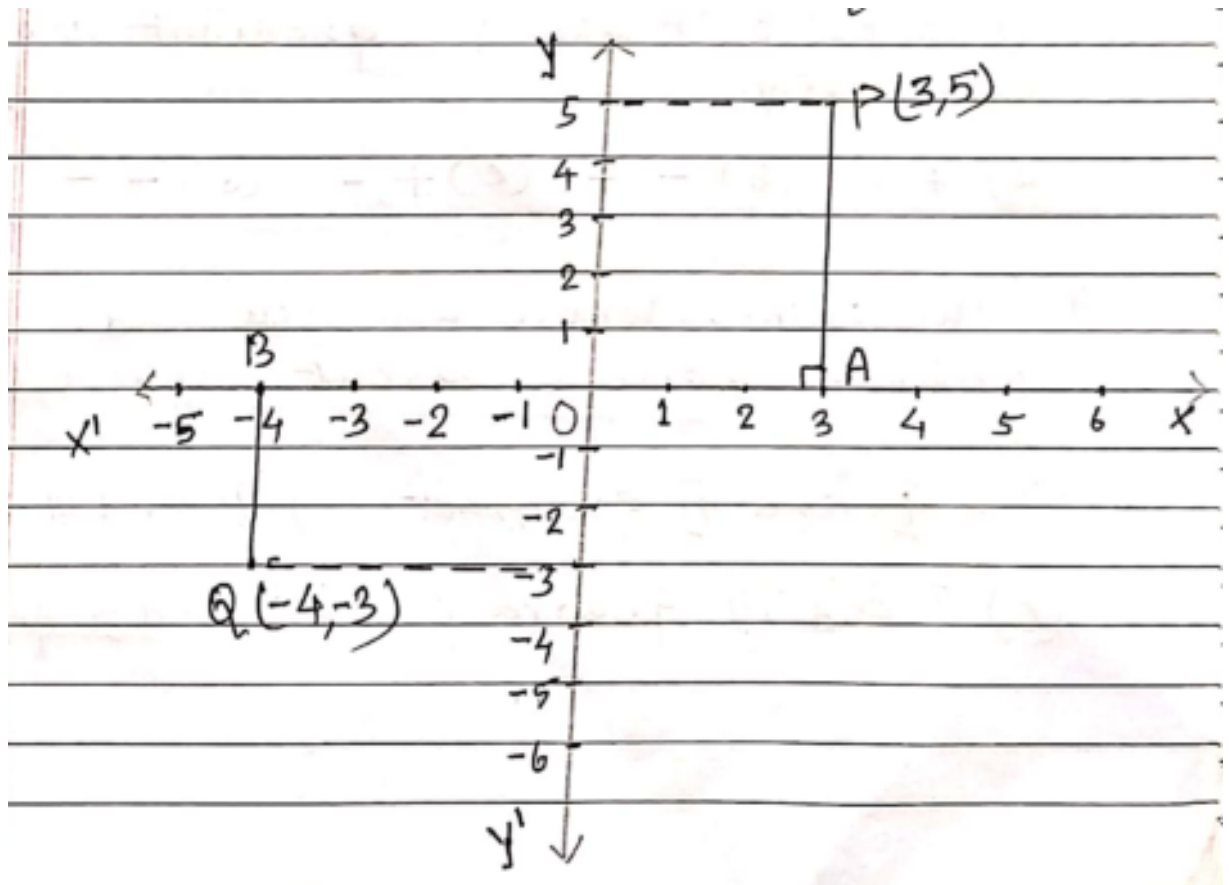
Let us see how to plot the points (3, 5) and (-4, -3) in the cartesian plane.

STEP – 1: On a graph paper, draw the lines XOX' and YOY' as the x-axis and y-axis respectively. Taking the scale 1cm=1 unit, mark points at equal distances both on x-axis and y-axis.

STEP – 2: We first plot the point (3, 5). Starting from the origin O, we move in positive x-direction a distance of 3 units and mark the point as A. now starting from A, we move in the positive y-direction a distance of 5 units and mark the point as P. clearly point P is a distance of 3 units from the y-axis and 5 units from the x-axis. Hence point P is the position of the point (3, 5). As both of its co-ordinates are positive, P lies in 1<sup>st</sup> quadrant.

STEP – 3: Now we plot the point (-4, -3). Starting from O, we move in the negative x-direction a distance of 4 units and mark the point as BN. Now starting from B, we move in the negative y-direction a distance of 3 units and mark the point as Q. Hence, Q is the position of the point (-4, -3). As both of its co-ordinates are negative, Q lies in 3<sup>rd</sup> quadrant.





## "ASSIGNMENT-2"

Choose and write the correct option in the following questions:-

1. The perpendicular distance of the point  $p(5, 7)$  from the y-axis is
  - a. 5
  - b. 12
  - c. 15
  - d. 7
2. Which of the following points lies on the y-axis
  - a.  $(0, -4)$
  - b.  $(-3, 0)$
  - c.  $(-3, -2)$
  - d.  $(7, 3)$
3. Signs of the abscissa and ordinate of a point in the 4<sup>th</sup> quadrant are respectively
  - a. +, +
  - b. -, +
  - c. +, -
  - d. -, -
4. The points whose abscissa and ordinate have different signs will lie in
  - a. 1<sup>st</sup> and 2<sup>nd</sup> quadrant
  - b. 2<sup>nd</sup> and 3<sup>rd</sup> quadrant
  - c. 1<sup>st</sup> and 3<sup>rd</sup> quadrant
  - d. 2<sup>nd</sup> and 4<sup>th</sup> quadrant
5. The perpendicular distance of the point  $p(3, 8)$  from the x-axis is
  - a. 3
  - b. 8
  - c. 11
  - d. 5
6. Plot the following points on the graph paper  $A(1, 3)$ ,  $B(-3, -1)$ ,  $C(-2, 3)$  and  $D(5, -4)$
7. Points  $A(5, 3)$ ,  $B(-2, 3)$  and  $D(5, -4)$  are three vertices of a square ABCD. Plot these points on a graph paper and hence find the co-ordinates of the vertex C.
8. Write the co-ordinates of the vertices of a rectangle whose length and breadth are 5 and 3 units respectively. One vertex at the origin, the longer side lies on the x-axis and one of the vertices lies in the third quadrant.

**Activity –** Plot the points  $(-1, 0)$ ,  $(1, 0)$ ,  $(1, 1)$ ,  $(0, 2)$ ,  $(-1, 1)$  and join them in order. What figure do you get?  
Perform this activity on graph paper and submit on google classroom by 8<sup>th</sup> August 2020.

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