COORDINATE GEOMETRY

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LEARNING OBJECTIVES

- Ordered Pair
- Cartesian System
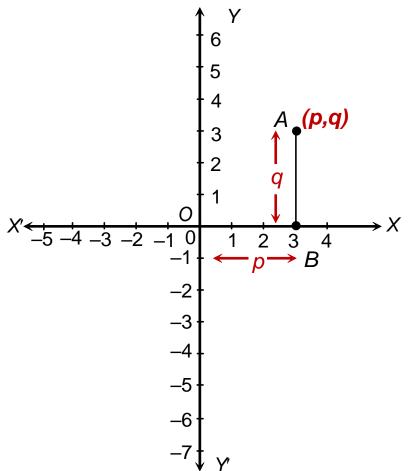- Plotting a point in the plane.
- Problem and Solution

PLOTTING OF POINTS

In order to plot the points in a plane, the algorithm used is as under.

• Draw two mutually perpendicular lines intersecting at the centre of graph paper; one line *XOX′* is drawn horizontal and *YOY′* is drawn vertical.

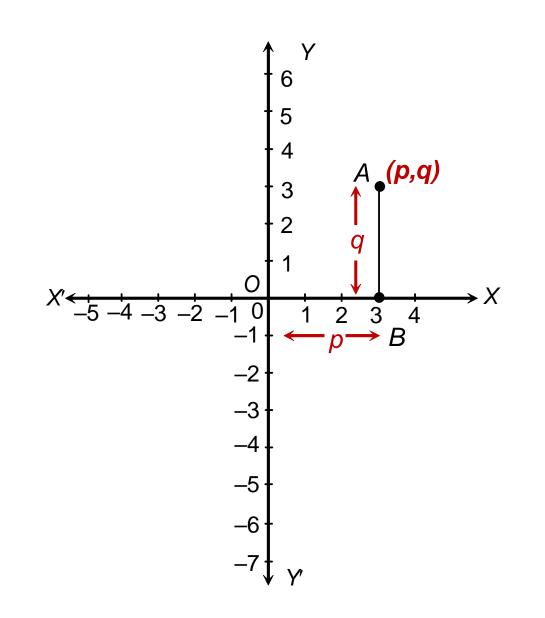• Name the point of intersection as *O* (origin).

• Select a suitable scale according to the given data and mark the points on both axes.
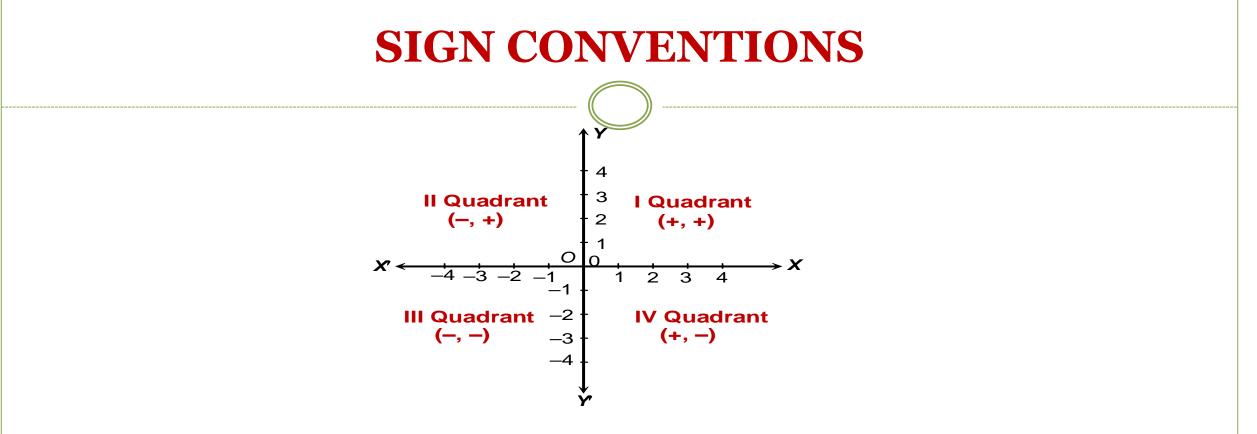
- Get the coordinates of the point A (p, q). Start from origin a distance p along OX if p is positive and along OX' if p is negative.

- Let the point be B. Now move vertically a distance q upward if q is positive and down ward if q is negative.

- The point where we reached finally is the point A (p, q).

SIGN CONVENTIONS

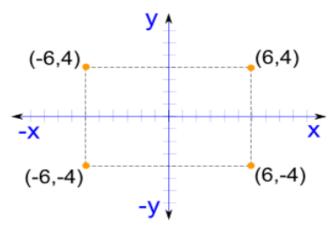| Region	Quadrant	x-coordinate	y-coordinate	Point
XOY	I	+	+	(+, +)
YOX'	II	−	+	(−, +)
X'OY'	III	−	−	(−,−)
Y'OX	IV	+	−	(+,−)

Example:

Plot the points (6, 4), (- 6,- 4), (- 6, 4) and (6,- 4) on the Cartesian plane.

Solution:

As you can see in (6, 4) both the numbers are positive so it will come in the first quadrant.

For x coordinate, we will move towards the right and count to 6.

Then from that point go upward and count to 4.

Mark that point as the coordinate (6, 4).

Similarly, we can plot all the other three points.

Plotting the points of the type (x,0) or (0,y)

A point on the x-axis has zero distance from the x-axis so coordinates of any points on the x-axis will be (x,0)

A point on the y-axis has zero distance from the y-axis so coordinates of any points on the y-axis will be (0,y)

Question1 : Plot the points (−2, 0), (2, 0), (2, 2), (0, 4), (−2, 2) given in order. What figure do you get?

Question2 : Plot the points(3,-4),(2,3),(-3,-4),(-2,3).In which quadrant do the given points lie?

SKILL GENERATED

1. Drawing the Cartesian plane,

2. Plotting the points in the Cartesian plane.

Thank You !