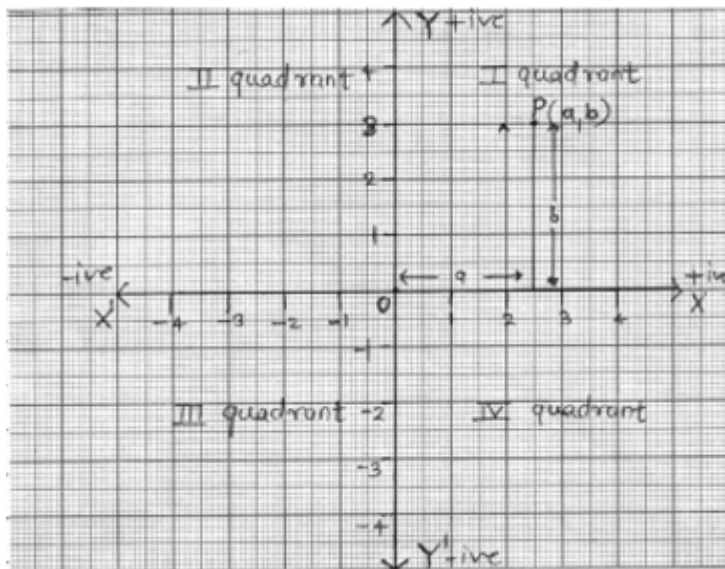


Chapter - 3

Coordinate Geometry

1. Cartesian System
2. Plotting a Point in the Plane with given Coordinates

- **Coordinate Geometry:** The branch of mathematics in which geometric problems are solved through algebra by using the coordinate system is known as coordinate geometry.
- **Coordinate System:** Coordinate axes: The position of a point in a plane is determined with reference to two fixed mutually perpendicular lines, called the coordinate axes.



In this system, position of a point is described by ordered pair of two numbers.

- **Ordered pair:** A pair of numbers a and b listed in a specific order with ' a ' at the first place and ' b ' at the second place is called an ordered pair (a,b)

Note that $(a,b) \neq (b,a)$

Thus $(2,3)$ is one ordered pair and $(3,2)$ is another ordered pair.

In given figure O is called origin.

The horizontal line XOY

OX is called the X-axis.

The vertical line YOY' is called the Y-axis.

Key Notes

$P(a,b)$ be any point in the plane. 'a' the first number denotes the distance of point from Y-axis and 'b' the second number denotes the distance of point from X-axis.

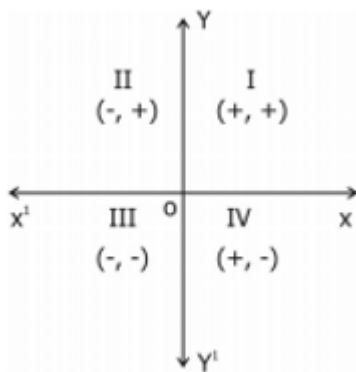
a - X - coordinate | abscissa of P.

b - Y - coordinate | ordinate of P.

The coordinates of origin are $(0,0)$

Every point on the x-axis is at a distance 0 unit from the Y-axis. So its ordinate is 0.

Every point on the y-axis is at a distance of unit from the X-axis. So, its abscissa is 0.



Note: Any point lying on $-x$ -axis or $-y$ -axis. Y-axis does not lie in any quadrant.
