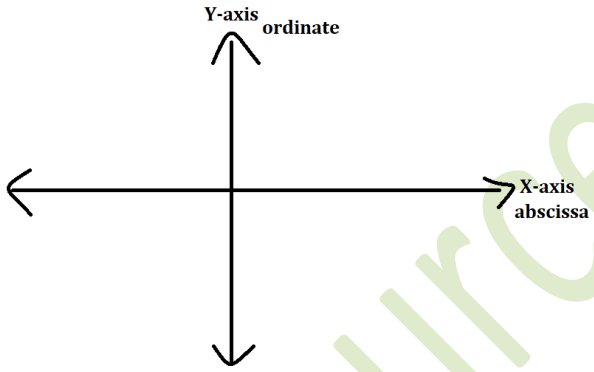
Formula
COORDINATE GEOMETRY
Class: 10th

a) COORDINATES



b) Distance Formulas

The distance between P (x_1, y_1) and Q (x_2, y_2) is

PQ = $\sqrt{(x_2 - x_1)^2 - (y_2 - y_1)^2}$

c) section formula

The coordinates of the point P (x, y) which divides the line segment joining the points A (x_1, y_1) and B (x_2, y_2) internally in the ratio m_1: m_2 are: -

$$X = \frac{m_1x_2+m_2x_1}{m_1+m_2} \quad , \quad Y = \frac{m_1y_2+m_2y_1}{m_1+m_2}$$

d) Mid – Point Formula

The mid-point of the line segment joining the points P (x_1, y_1) and Q (x_2, y_2) is: -

$$X = \frac{X_1+X_2}{2} \quad , \quad Y = \frac{y_1+y_2}{2}$$

e) Area of a Triangle

The area of the triangle formed by the points (x_1, y_1), (x_2, y_2) and (x_3, y_3) is the numerical value of the expression:

$$\frac{1}{2}[x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)]$$