

Distance Formula.

(1) **Distance formula:**The distance between two points $A(x_1, y_1, z_1)$ and $B(x_2, y_2, z_2)$ is given by

$$AB = \sqrt{[(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2]}$$

(2) **Distance from origin:**Let O be the origin and P(x, y, z) be any point, then

$$OP = \sqrt{(x^2 + y^2 + z^2)}.$$

(3) **Distance of a point from co-ordinate axes:**Let P(x, y, z) be any point in the space. Let PA, PB and PC be the perpendiculars drawn from P to the axes OX, OY and OZ respectively.

Then, $PA = \sqrt{(y^2 + z^2)}$

$$PB = \sqrt{(z^2 + x^2)}$$

$$PC = \sqrt{(x^2 + y^2)}$$

