§13.1 3-Dimensional Co-ordinate System

⊙ Distance between $P_1(x_1, y_1, z_1)$ & $P_2(x_2, y_2, z_2)$

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

⊙ Mid-point of $P_1(x_1, y_1, z_1)$ & $P_2(x_2, y_2, z_2)$

$$= \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}, \frac{z_1+z_2}{2} \right)$$

⊙ Equation of the sphere centered at (h, k, l) & radius r is given by

$$(x-h)^2 + (y-k)^2 + (z-l)^2 = r^2$$