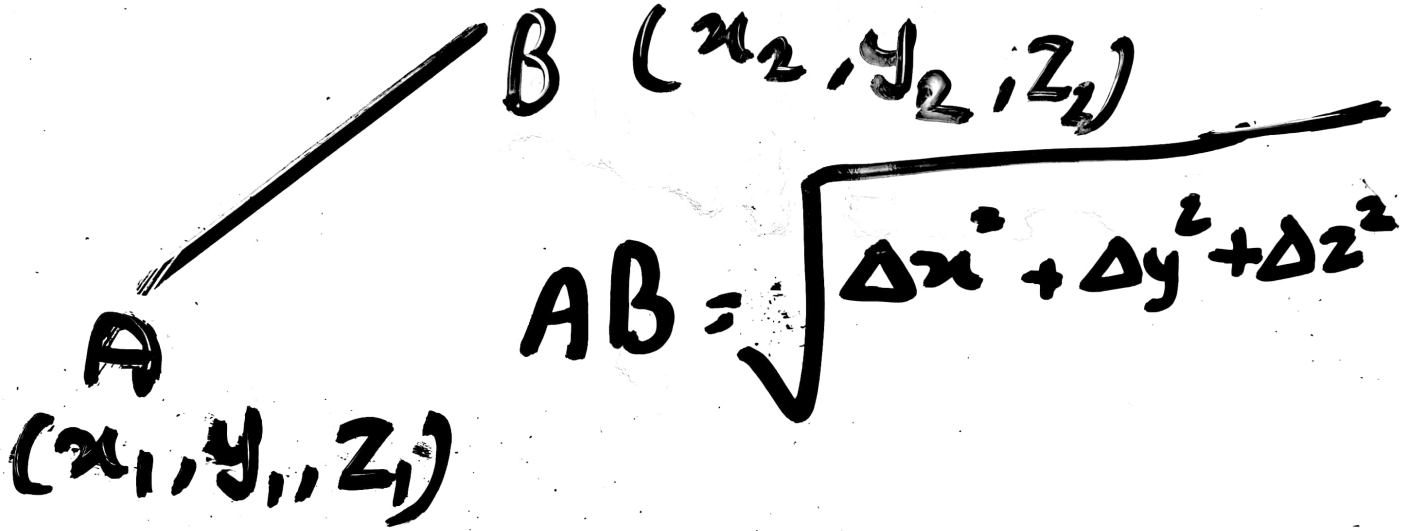
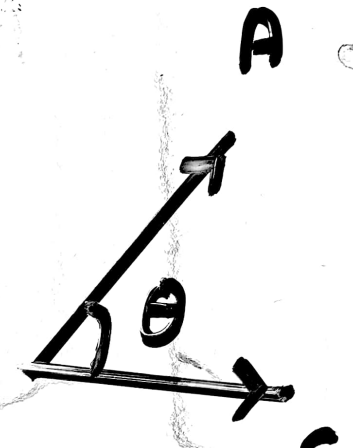

B (x_2, y_2, z_2)
A
(x_1, y_1, z_1)
$AB = \sqrt{\Delta x^2 + \Delta y^2 + \Delta z^2}$

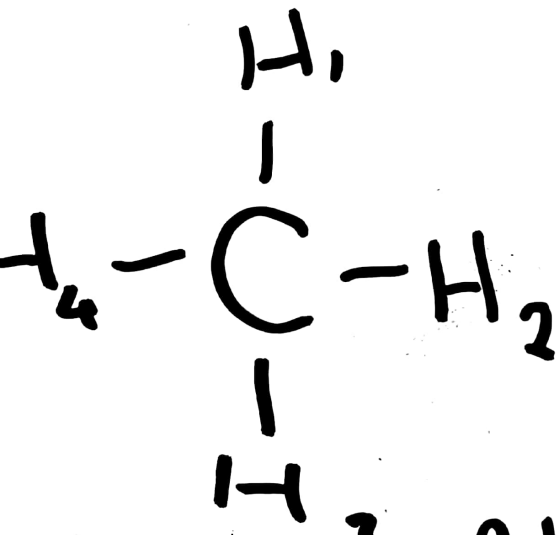
$$\overline{BA} = \bar{a} - \bar{b}$$

$$\overline{BC} = \bar{c} - \bar{b}$$



$$\overline{BA} \cdot \overline{BC} = |BA||BC| \cos\theta$$

$$\therefore \theta = \cos^{-1}\left(\frac{\overline{BA} \cdot \overline{BC}}{|BA||BC|}\right)$$



All possible combinations:

CH_1

CH_2 H_1H_2

CH_3 H_1H_3 H_2H_3

CH_4 H_1H_4 H_2H_4 H_3H_4

Total combinations: $\frac{N(N-1)}{2}$

Actual Bonds:

CH_1
CH_2
CH_3
CH_4

} Atoms bonded if:

bond length $\leq (r_1 + r_2) \times 1.2$