$ax + \ldots + cz = 0$

then collinear

distance from a point to line

1 spree

$d = \frac{|P_1Q \times B|}{|B|}$

distance from a point to plan

$d = |P_1Q \cdot n|$

$\hat{n} = \frac{Ai + Bj + Ck}{\sqrt{A^2 + B^2 + C^2}}$

Angle b/w two plane

$\cos\theta = \frac{n_1 \cdot n_2}{|n_1||n_2|}$

angle b/w line and plane

$\theta = \sin^{-1}\left(\frac{n \cdot B}{|n||B|}\right)$

$\theta = \frac{\pi}{2} - \varphi = \frac{\pi}{2} - \cos^{-1}\left(\frac{n \cdot B}{|n||B|}\right) = \sin^{-1}\left(\frac{n \cdot B}{|n||B|}\right)$

Vector eqn of sphere

$(x - x_0)^2 + (y - y_0)^2 + (z - z_0)^2 = a^2$

$|r| = a$

$C = (-c, h, -k)$

Vector equation of plane pass through 3 points

$P_1P \cdot P_2P_2 \times P_1P_3 = 0$

Regular hexagone

$AB + AC + AD + AE + AE = 3AD$