

DISTANCIA DE TRES PUNTOS SOBRE UNA ESFERA A UN PUNTO EXTERNO

$$(x_1 - a)^2 + (y_1 - b)^2 + (z_1 - c)^2 = r^2$$

$$(x_2 - a)^2 + (y_2 - b)^2 + (z_2 - c)^2 = r^2$$

$$(x_3 - a)^2 + (y_3 - b)^2 + (z_3 - c)^2 = r^2$$

$$(x - a)^2 + (y - b)^2 + (z - c)^2 = r^2$$

$$(x_1 - a)^2 + (y_1 - b)^2 + (z_1 - c)^2 = (x_2 - a)^2 + (y_2 - b)^2 + (z_2 - c)^2$$

$$\underbrace{x_1^2 + y_1^2 + z_1^2}_{\alpha_1} + \cancel{a^2 + b^2 + c^2}^0 - 2x_1a - 2y_1b - 2z_1c = \underbrace{x_2^2 + y_2^2 + z_2^2}_{\alpha_2} + \cancel{a^2 + b^2 + c^2}^0 - 2x_2a - 2y_2b - 2z_2c$$

$$(x_2 - x_1)a + (y_2 - y_1)b + (z_2 - z_1)c = \frac{\alpha_2 - \alpha_1}{2}$$

$$(x_3 - x_1)a + (y_3 - y_1)b + (z_3 - z_1)c = \frac{\alpha_3 - \alpha_1}{2}$$

$$(x_3 - x_2)a + (y_3 - y_2)b + (z_3 - z_2)c = \frac{\alpha_3 - \alpha_2}{2}$$