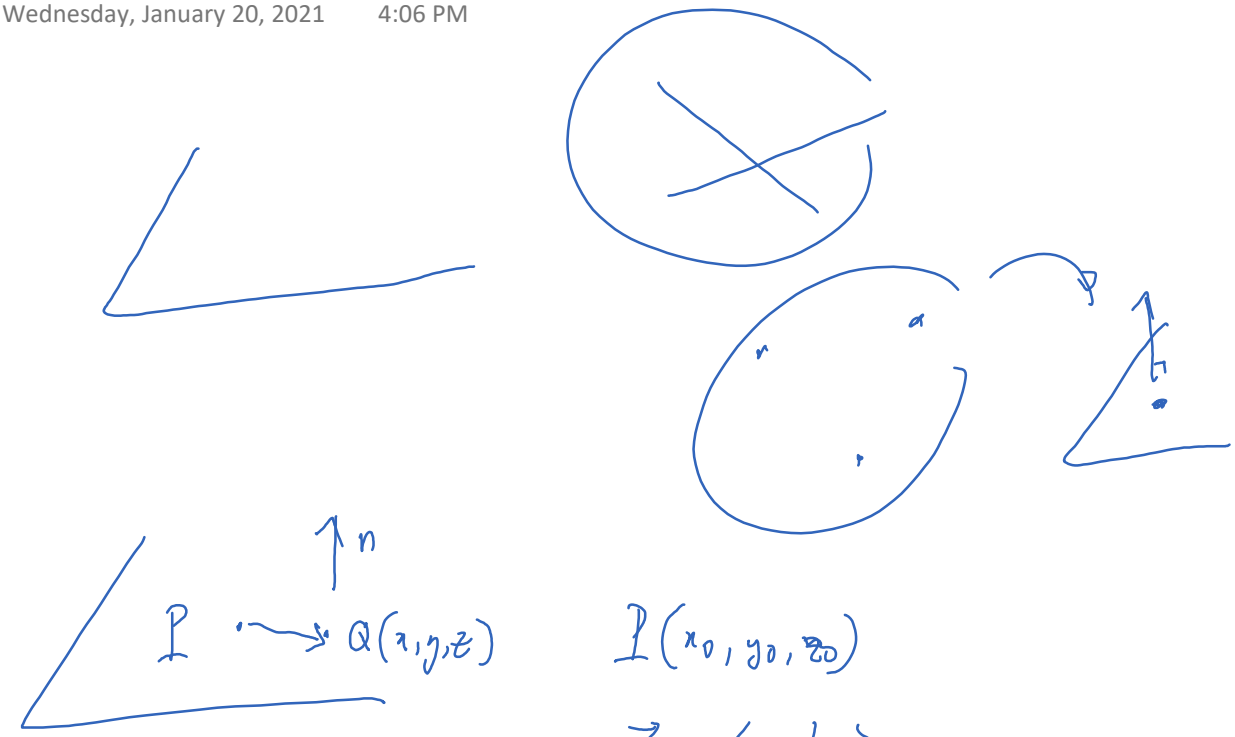
Equation of planes

Wednesday, January 20, 2021 4:06 PM



$P \rightarrow Q(x,y,z)$ $\quad P(x_0, y_0, z_0)$

$\vec{n} = \langle a, b, c \rangle$

$\vec{PQ} \perp \vec{n}$

$\vec{PQ} \cdot \vec{n} = 0 \longrightarrow$ vector eq of the plane

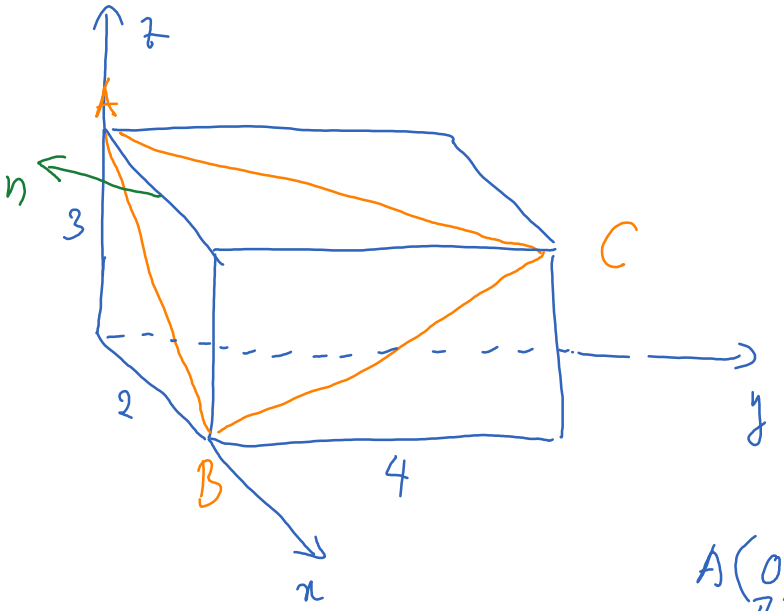
$\vec{PQ} = \langle x - x_0, y - y_0, z - z_0 \rangle$

$\longrightarrow \vec{n} = \langle a, b, c \rangle$

$a(x - x_0) + b(y - y_0) + c(z - z_0) = 0 \longrightarrow$ scalar eq. of the plane

$ax + by + cz = ax_0 + by_0 + cz_0$

Ex



$A(0,0,3)$

$\vec{n} = \vec{AB} \times \vec{AC}$

$B(2,0,0)$

$C(2,4,3)$

$\vec{AB} = \langle 2, 0, -3 \rangle$

$\vec{AC} = \langle 2, 4, 0 \rangle$

$\vec{n} = \langle 12, -6, 8 \rangle$

scalar eq of the plane : $12x - 6y + 8z = 24$