(8) Sean $\begin{cases} L: (x,y,z) = (2+t, 3-t, 5+2t),\ t \in \mathbb{R} \\ P(3,5,7) \end{cases}$

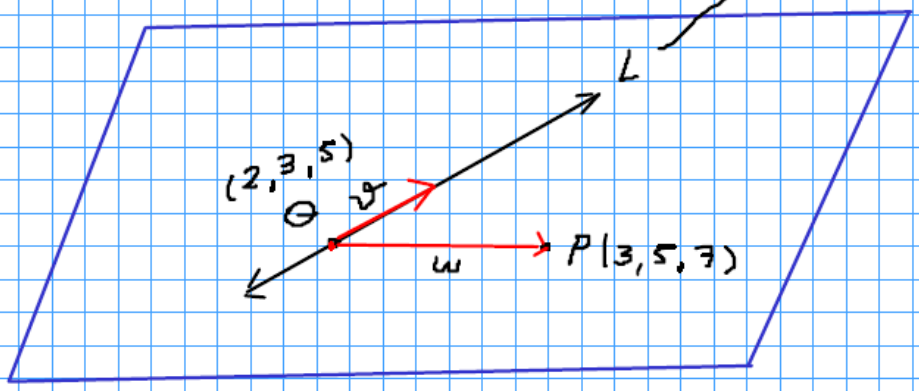
¿ $P \in L$? $\quad (3,5,7) = (2+t, 3-t, 5+2t)$

$\Leftrightarrow \begin{cases} 2+t=3 \\ 3-t=5 \\ 5+2t=7 \end{cases} \Leftrightarrow t=1 = -2$ ↯

$\therefore P \notin L.$

$(x,y,z) = (2,3,5) + t(1,-1,2)$

Q, $\vec{v}$



$\vec{w} = \vec{QP} = P - Q = (1,2,2)$

Una ecuación vectorial es:

$(x,y,z) = (2,3,5) + t\vec{v} + \lambda\vec{w}$

$= (2,3,5) + t(1,-1,2) + \lambda(1,2,2)$

$\vec{v} \times \vec{w} = \left(\begin{vmatrix} -1 & 2 \\ 2 & 2 \end{vmatrix}, -\begin{vmatrix} 1 & 2 \\ 1 & 2 \end{vmatrix}, \begin{vmatrix} 1 & -1 \\ 1 & 2 \end{vmatrix} \right)$

$= (-6, 0, 3) = -3(2, 0, -1)$

$= -3(1, 0, -1)$

Sea $n = (2, 0, 1)$

Ec. cartesiana: $(2,0,-1) \cdot (x,y,z) = (2,0,-1) \cdot (2,3,5)$

$(2,0,-1) \cdot (x,y,z) = (2,0,-1) \cdot (2,3,5)$

$2x - z = -1 \rightarrow 2x - z = -1$