

EJERCICIO M2BE2228:

"achimagec.com"

$$P(0, -1, 2)$$

$$r \equiv \frac{x}{2} = \frac{y-2}{3} = \frac{z+1}{-1}$$

a) ¿Plano π que contiene a r y P ?

b) ¿recta s , perpendicular a π y que pasa por el punto medio de $A(1, 0, -1)$ y $B(-1, -2, -1)$?

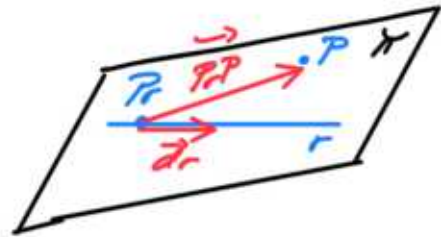
a) Plano que contiene a r y P :

$$r \equiv \frac{x}{2} = \frac{y-2}{3} = \frac{z+1}{-1} \rightarrow \vec{d}_r = (2, 3, -1)$$

$$\rightarrow P_r = (0, 2, -1)$$

$$P(0, -1, 2) \rightarrow \vec{d}_r \quad \vec{P_rP} \quad P_r$$

$$\begin{vmatrix} 2 & 0 & x-0 \\ 3 & -3 & y-2 \\ -1 & 3 & z+1 \end{vmatrix} = 0$$



$$\vec{P_rP} = P - P_r = (0, -1, 2) - (0, 2, -1) = (0, -3, 3) = \vec{P_rP}$$

$$-6(z+1) + 0 + 9(x-0) - 3(x-0) + 0 - 6(y-2) = 0$$

$$-6z - 6 + 9x - 3x - 6y + 12 = 0$$

$$6x - 6y - 6z + 6 = 0$$

$$\boxed{x - y - z + 1 = 0}$$

$$\rightarrow \vec{n}_\pi = (1, -1, -1)$$

Continúa...

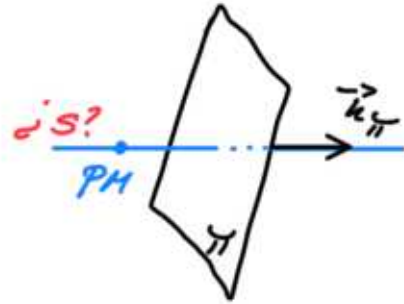
b) ¿s? $\Rightarrow$ Perp. a π por P.H. $A(1, 0, -1); B(-1, -2, -1)$:

la recta s: $\vec{d}_s = \vec{u}_\pi$
 $P_s = P_H$

$$P_{HAB} = \left(\frac{1-1}{2}, \frac{0-2}{2}, \frac{-1-1}{2} \right)$$

$$P_{HAB} = (0, -1, -1)$$

$$\vec{d}_s = \vec{u}_\pi = (1, -1, -1)$$



$$s \equiv \frac{x-1}{1} = \frac{y+1}{-1} = \frac{z+1}{-1}$$