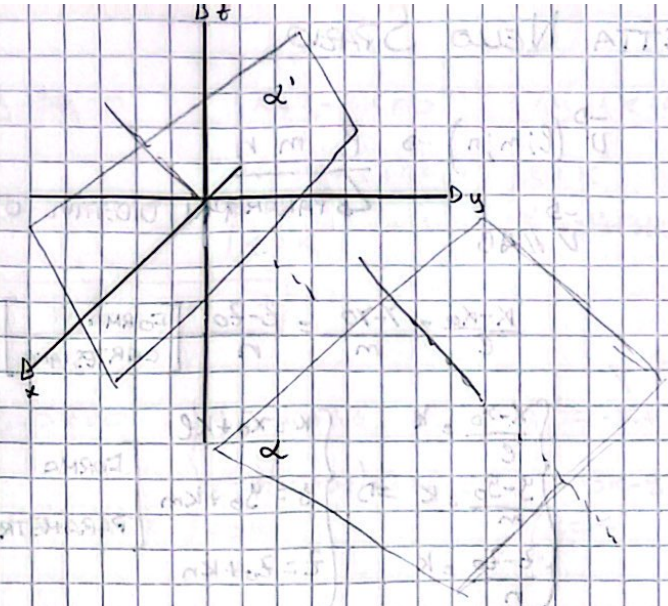


$\alpha' \equiv a_1x + b_1y + c_1z + d_1 = 0$

$\alpha: ax + by + cz + d = 0$

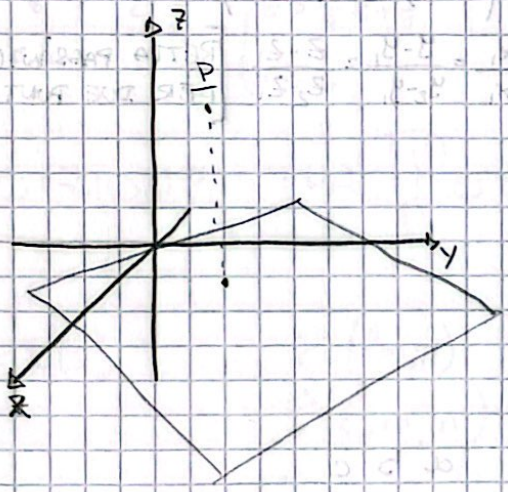
condizione di $\perp$ Tra α; α'

$a_1a + b_1b + c_1c = 0$

condizione di $\parallel$ Tra α : α'

$\frac{a_1}{a} = \frac{b_1}{b} = \frac{c_1}{c} = k$

DISTANZA PUNTO PIANO



$$d(P;\alpha) = \frac{|ax_0 + by_0 + cz_0 + d|}{\sqrt{a^2+b^2+c^2}}$$

$P(x_0; y_0; z_0)$

es

$\alpha: x - 2y - z + 3 = 0$ $\quad \vec{n}\,(1; -2; 3)$

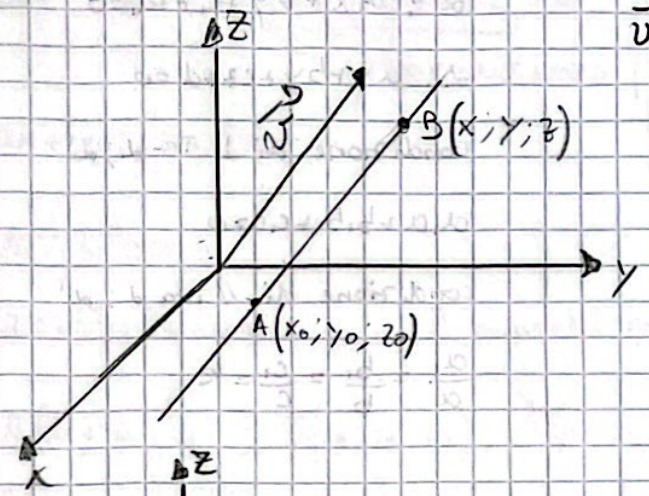
$A\left(0; -1; \frac{1}{2}\right)$ $\quad B\left(-\frac{3}{2}; 0; 0\right)$

α_1 : $\alpha_1 \perp \alpha$ e α_1 per A e B

$$\begin{cases} 1a_1 - 2b_1 - 1c_1 = 0 \\ -b_1 + \frac{1}{2}c_1 + d_1 = 0 \\ -\frac{3}{2}a_1 + d_1 = 0 \end{cases} \quad \begin{cases} 1a_1 - 2b_1 - 1c_1 = 0 \\ -b_1 + \frac{1}{2}c_1 + \frac{3}{2}a_1 = 0 \\ d_1 = \frac{3}{2}a_1 \end{cases} \quad \begin{cases} c_1 = a_1 - 2b_1 \\ -b_1 + \frac{1}{2}a_1 - b_1 + \frac{3}{2}a_1 = 0 \\ d_1 = \frac{3}{2}a_1 \end{cases} \quad \begin{cases} c_1 = a_1 - 2b_1 \\ -2b_1 = -2a_1 \\ d_1 = \frac{3}{2}a_1 \end{cases} \quad \begin{cases} c_1 = -a_1 \\ b_1 = a_1 \\ d_1 = \frac{3}{2}a_1 \end{cases}$$

$x + y - z + \frac{3}{2} = 0$

LA RETTA NELLO SPAZIO



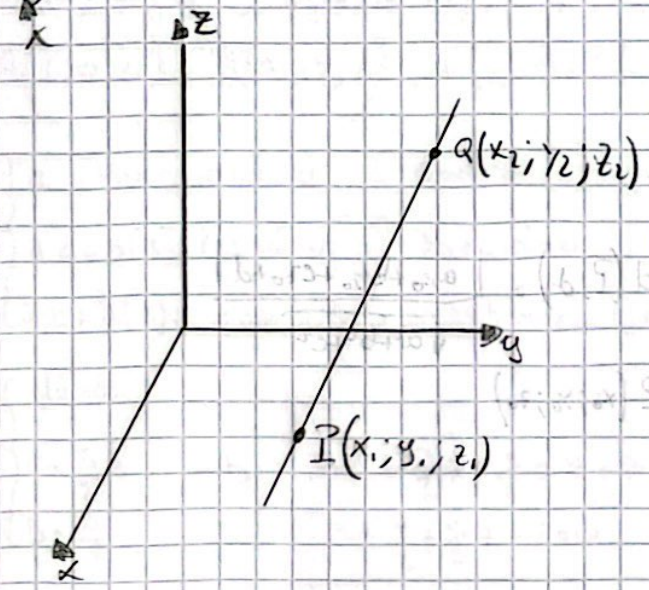
$\vec{v}(l;m;n) \rightarrow l\ m\ n$

PARAMETRI DIRETTIVI DI UNA RETTA

$\vec{v} \parallel AB$

$$\frac{x-x_0}{l} = \frac{y-y_0}{m} = \frac{z-z_0}{n}$$ [FORMA CARTESIANA]

$$\begin{cases} \frac{x-x_0}{l} = k \\ \frac{y-y_0}{m} = k \\ \frac{z-z_0}{n} = k \end{cases} \Rightarrow \begin{cases} x = x_0 + kl \\ y = y_0 + km \\ z = z_0 + kn \end{cases}$$ [FORMA PARAMETRICA]



$\overrightarrow{PQ}(x_2-x_1;\ y_2-y_1;\ z_2-z_1)$

$$\frac{x-x_1}{x_2-x_1} = \frac{y-y_1}{y_2-y_1} = \frac{z-z_1}{z_2-z_1}$$ [RETTA PASSANTE PER DUE PUNTI]

$$\begin{cases} ax+by+cz+d=0 \\ ax_1+by_1+cz_1+d_1=0 \end{cases}$$ [INTERSEZIONE TRA DUE PIANI]

a b c
COEFFICIENTI DIRETTORI