

$$t: y = x + h$$

par  $(1, 1)$

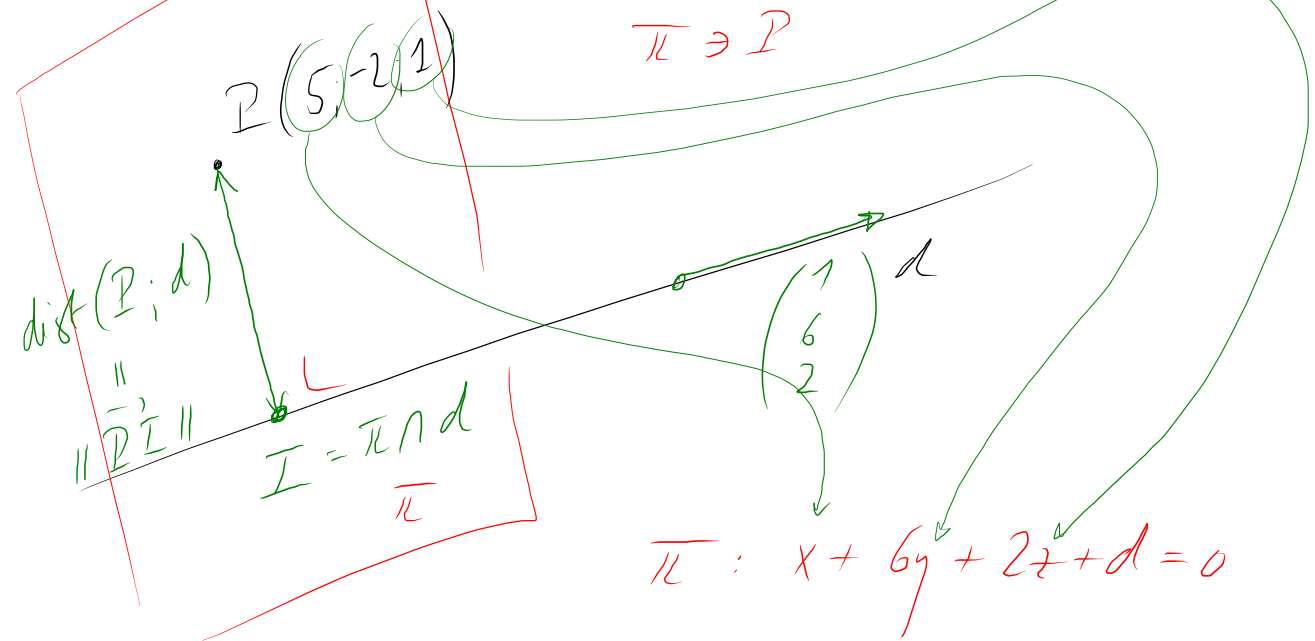
$$1 = 1 + h$$

$$0 = h$$

$$\Rightarrow \boxed{t: y = x}$$

3.64 b)

$$\bar{\pi} \perp d$$
$$\bar{\pi} \ni P$$



$$\bar{\pi} : x + 6y + 2z + d = 0$$

$$\Rightarrow \bar{\pi} : x + 6y + 2z + 5 = 0 \quad \begin{matrix} 5 + 6(-2) + 2 \cdot 1 + d = 0 \\ 5 - 12 + 2 + d = 0 \end{matrix}$$

$$d = 5$$

I:

4x4

$$\begin{cases} x + 6y + 2z + 5 = 0 \\ x = -3 + k \\ y = 8 + 6k \\ z = 16 + 2k \end{cases}$$

$$\text{I} \begin{cases} x = -5 \\ y = -4 \\ z = 12 \end{cases}$$

$$-3 + k + 6(8 + 6k) + 2(16 + 2k) + 5 = 0$$

$$-3 + k + 48 + 36k + 32 + 4k + 5 = 0$$

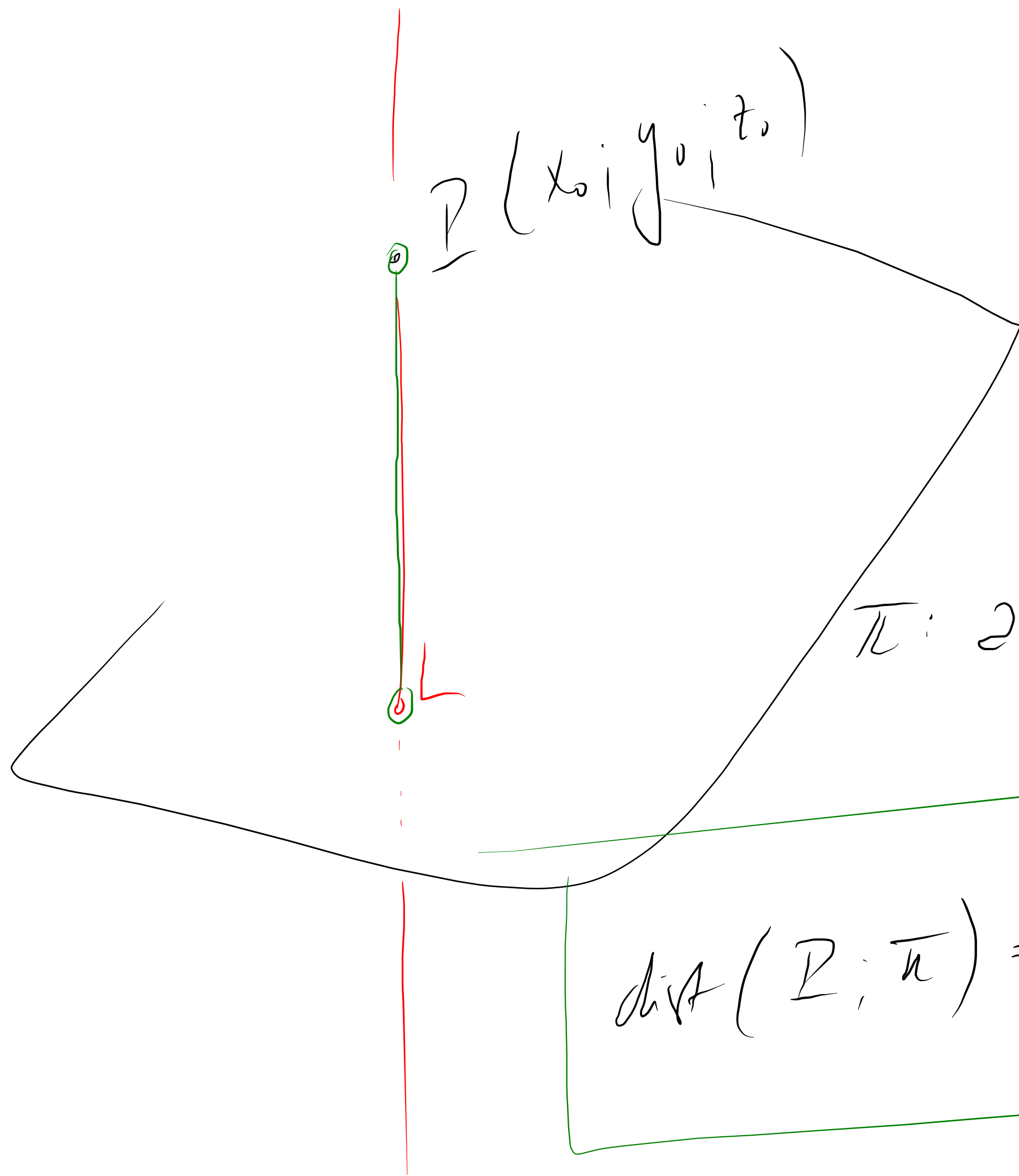
$$41k = -82$$

$$k = -2$$

$$\Rightarrow I(-5, -4, 12)$$

$$\Rightarrow \vec{PI} = \begin{pmatrix} -5 - 5 \\ -4 + 2 \\ 12 - 1 \end{pmatrix} = \begin{pmatrix} -10 \\ -2 \\ 11 \end{pmatrix}$$

$$\text{dist}(P; d) = \sqrt{100 + 4 + 121} = \sqrt{225} = 15$$



$P(x_0, y_0, z_0)$

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

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