

$$\begin{pmatrix} x' \\ y' \end{pmatrix} = \begin{pmatrix} a & b \\ c & d \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} + \begin{pmatrix} e \\ f \end{pmatrix}$$

$$\det \neq 0$$

$$f: X \rightarrow X \quad b_i$$
$$A, B \subset X \quad A \cap B \neq \emptyset$$

$$\Rightarrow f(A) \cap f(B) \neq \emptyset$$

$$W = \mathbb{R}^3$$

Ogni forma lineare su W è una applicazione del tipo

$$f: \mathbb{R}^3 \rightarrow \mathbb{R}$$
$$(x, y, z) \mapsto ax + by + cz$$

$$g: \mathbb{R}^3 \longrightarrow \mathbb{R}$$
$$(x, y, z) \longmapsto dx + ey + fz$$

$$f + g: \mathbb{R}^3 \longrightarrow \mathbb{R}$$
$$(x, y, z) \longmapsto (a+d)x + (b+e)y + (c+f)z$$

$$5f: \mathbb{R}^3 \longrightarrow \mathbb{R}$$
$$(x, y, z) \longmapsto 5ax + 5by + 5cz$$

Un iperpiano di \mathbb{R}^3 :

$$\Pi : 7x - 2y + 4z = 0$$

$$\Pi : 14x - 4y + 8z = 0$$

~~$$0x + 0y + 0z = 0$$~~

$$\Pi = \left\{ (x, y, z) \in \mathbb{R}^3 \mid 7x - 2y + 4z = 0 \right\}$$