$$X := \{ x \in \mathbb{R}^n ; Ax \leq b \}$$

$A \in M(m,n)$, $b \in M(m,1)$

$$A = \begin{bmatrix} a_1 \\ \vdots \\ a_m \end{bmatrix}, \quad b = \begin{bmatrix} b_1 \\ \vdots \\ b_m \end{bmatrix}$$

$$X = \bigcap_{j=1}^{m} \{ x \in \mathbb{R}^n ; a_j x \leq b_j \}$$

¡Convexo!

En $\mathbb{R}^2$ sea C el primer cuadrante

$$C = \{ x := (x_1, x_2) \in \mathbb{R}^2 ; -x_1 \leq 0, \; -x_2 \leq 0 \}$$

$$= \left\{ X := \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} ; \underbrace{\begin{bmatrix} -1 & 0 \\ 0 & -1 \end{bmatrix}}_{A} \underbrace{\begin{bmatrix} x_1 \\ x_2 \end{bmatrix}}_{X} \leq \underbrace{\begin{bmatrix} 0 \\ 0 \end{bmatrix}}_{b} \right\}$$

$\mathbb{R}^n$

V e.v. (sobre $\mathbb{R}$) $\subseteq \mathbb{C}$

$\mathbb{C}^n$ $\quad$ $\mathbb{K}$

$(V, +, \cdot, K, \text{propic.})$

$H := \{v \in V ; \langle v, n \rangle = c\}$ $\quad$ recta, hiperplano

$n \in V \setminus \{0\}$ $\quad$ politopo