EX SEV DIM IN

$\boxed{1/\mathbb{R}}$ Un sev F de $\mathbb{R}$ est de $\dim F \leq 1$

ie $\dim F \in \{0, 1\}$

$$\begin{cases} \dim F = 0 \Leftrightarrow F = \{0\} \\ \dim F = 1 \Leftrightarrow F = \mathbb{R} \end{cases} \Rightarrow \text{sevs de } \mathbb{R} = \{\{0\}, \mathbb{R}\}$$

$\boxed{1/\mathbb{R}^2}$ Soit F sev $\mathbb{R}^2$

dim sev $\in [\![0, 2]\!]$

$$\begin{cases} \dim F = 0 \Leftrightarrow F = \{0\} \\ \dim F = 1 \Leftrightarrow F = \text{droites de } \mathbb{R}^2 \\ \dim F = 2 \Leftrightarrow F = \mathbb{R}^2 \end{cases}$$

$$\Rightarrow \text{sevs de } \mathbb{R}^2 = \left\{\begin{pmatrix} 0 \\ 0 \end{pmatrix}\right\} \cup \text{droites} \cup \{\mathbb{R}^2\}$$

$\boxed{1/\mathbb{R}^3}$ Idem :

$$\text{sevs de } \mathbb{R}^3 = \left\{\begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}\right\} \cup \text{droites} \cup \text{plans} \cup \{\mathbb{R}^3\}$$

$\boxed{1/\mathbb{R}^4}$ Idem :

$$\text{sevs de } \mathbb{R}^4 = \left\{\begin{pmatrix} 0 \\ 0 \\ 0 \\ 0 \end{pmatrix}\right\} \cup \text{droites} \cup \text{plans} \cup \text{hyperplans} \cup \{\mathbb{R}^4\}$$