Another Example

Ex: $\mathbb{R}^2$

Restrictions Representation: $\mathbb{R}^2$ is the set of all column vectors (with two entries) whose entries are unrestricted.

Linear Combo Representation: Since

$$x = \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} = x_1 \begin{bmatrix} 1 \\ 0 \end{bmatrix} + x_2 \begin{bmatrix} 0 \\ 1 \end{bmatrix}$$

we can say that $\mathbb{R}^2$ is the set of all linear combos of

$$\begin{bmatrix} 1 \\ 0 \end{bmatrix} \quad \text{and} \quad \begin{bmatrix} 0 \\ 1 \end{bmatrix}$$