

Which of the following are subspaces of \mathbb{R}^n for some n ? Circle them.

$$\{\vec{0}\}$$

$$\{I_n\}$$

$$\left\{ \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}, \begin{bmatrix} 5 \\ 4 \\ 6 \end{bmatrix} \right\}$$

$$\left\{ a \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix} + b \begin{bmatrix} 5 \\ 4 \\ 6 \end{bmatrix} : a, b \in \mathbb{R} \right\}$$

$$\left\{ a \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix} + b \begin{bmatrix} 5 \\ 4 \\ 6 \end{bmatrix} : a, b \geq 0 \right\}$$

$$\text{span} \left(\left(\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}, \begin{bmatrix} 5 \\ 4 \\ 6 \end{bmatrix} \right) \right)$$

$$\text{span} \left(\left(\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}, \begin{bmatrix} 5 \\ 4 \end{bmatrix} \right) \right)$$

$$\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$$

The columns of $\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$

The upper half plane, including the x -axis:

