

Let $A = \begin{bmatrix} 2 & 6 & 2 & 8 \\ -3 & 1 & -3 & -8 \\ 3 & 4 & 3 & 10 \end{bmatrix}$

1. Fill in the blank: $\text{nul}(A)$ is a subspace of $\mathbb{R}^{\text{---}}$

2. Is $\vec{x} = \begin{bmatrix} 2 \\ -1 \\ 3 \\ -1 \end{bmatrix}$ in $\text{nul}(A)$?

3. Find a spanning set of vectors for $\text{nul}(A)$

4. Fill in the blank: $\text{col}(A)$ is a subspace of $\mathbb{R}^{\text{---}}$

5. Is $\vec{b} = \begin{bmatrix} 44 \\ -36 \\ 51 \end{bmatrix}$ in $\text{col}(A)$?

6. Find a spanning set of vectors for $\text{col}(A)$