

Quiz 6 (12 pm)

Use the following matrix for the first two problems.

$$A = \begin{bmatrix} 3 & 1 & -3 & 1 & 0 \\ 0 & 1 & 3 & 1 & 0 \\ 3 & 1 & -3 & 1 & 1 \\ 0 & 0 & 0 & 0 & 1 \end{bmatrix}$$

1. Find the rref of A . (5 pts.)

2. Find a basis for $\text{Col } A$ the column space of A . (5 pts.)

3. Find the $\text{Nul } A$ null space of A . Be specific. (5 pts.)

4. Find the coordinate vector $\begin{bmatrix} x \\ y \end{bmatrix}_{\mathcal{B}}$ of $\mathbf{x} = \begin{bmatrix} 2 \\ -3 \end{bmatrix}$ relative to the basis \mathcal{B} . (5 pts.)

$$\mathcal{B} = \left\{ \begin{bmatrix} 0 \\ -1 \end{bmatrix}, \begin{bmatrix} 1 \\ 1 \end{bmatrix} \right\}$$