

Quiz 4

1. Consider two vectors $\mathbf{u}, \mathbf{v} \in \mathbb{R}^n$. If \mathbf{u} is not scalar multiple of \mathbf{v} , must the pair be linearly independent? Prove your result by using the definition of linear independence.

2. Determine whether the vectors $\mathbf{u} = \begin{pmatrix} 1 \\ 1 \\ -2 \end{pmatrix}$, $\mathbf{v} = \begin{pmatrix} -5 \\ -1 \\ 2 \end{pmatrix}$, $\mathbf{w} = \begin{pmatrix} 7 \\ 0 \\ -5 \end{pmatrix}$ are linearly independent.