MATH 3D Prep: Linear Independence

1. Determine whether the vectors $\vec{u} = \begin{bmatrix} 1 \\ 3 \\ 1 \end{bmatrix}$, $\vec{v} = \begin{bmatrix} 2 \\ 0 \\ 5 \end{bmatrix}$, and $\vec{w} = \begin{bmatrix} 0 \\ 2 \\ 8 \end{bmatrix}$ are linearly independent.

2. Determine whether the functions $x^2 + 2x + 1$, $x^2 - 1$, $x + 1$ are linearly independent