6. Let $\vec{t} = \begin{pmatrix} 1 \\ 1 \\ 2 \\ 0 \end{pmatrix}$, $\vec{u} = \begin{pmatrix} 1 \\ 3 \\ -1 \\ 4 \end{pmatrix}$, $\vec{v} = \begin{pmatrix} 0 \\ 2 \\ -1 \\ 1 \end{pmatrix}$, and $\vec{w} = \begin{pmatrix} 2 \\ 2 \\ 6 \\ -3 \end{pmatrix}$.

(a) Is $\vec{z} = \begin{pmatrix} 0 \\ 2 \\ -5 \\ 7 \end{pmatrix}$ a linear combination of $\vec{t}, \vec{u}, \vec{v}, \vec{w}$? Justify your answer.

(b) Is $\vec{s} = \begin{pmatrix} 2 \\ 3 \\ 0 \\ 6 \end{pmatrix}$ a linear combination of $\vec{t}, \vec{u}, \vec{v}, \vec{w}$? Justify your answer.