Question # 1:

Express $\vec{b} = \begin{bmatrix} 2 \\ 4 \end{bmatrix}$ as a linear combination of $\vec{s} = \begin{bmatrix} 1 \\ 2 \end{bmatrix}$ and $\vec{t} = \begin{bmatrix} 3 \\ 4 \end{bmatrix}$

Question # 2

Determine whether the set of vectors $\vec{v}_1 = (1, 2, -1)$, $\vec{v}_2 = (3, -3, 4)$ and $\vec{v}_3 = (2, -1, -2)$ will span R^3?

Question # 3

Determine whether the set of vectors $\vec{v}_1 = (1, 3, 1, 1)$, $\vec{v}_2 = (1, 2, 1, 0)$ and $\vec{v}_3 = (1, 1, 0, 0)$ will span R^3?

Question # 4

Determine whether the set of vectors $\vec{v}_1 = (1, -1, 4)$, $\vec{v}_2 = (-2, 1, 3)$ and $\vec{v}_3 = (4, -3, 5)$ will span R^3?

Question # 5

Let $\vec{v}_1 = \begin{bmatrix} 1 \\ 2 \\ -3 \end{bmatrix}$, $\vec{v}_2 = \begin{bmatrix} -1 \\ 1 \\ 4 \end{bmatrix}$ and $\vec{z} = \begin{bmatrix} h \\ 2 \\ -3 \end{bmatrix}$. If $\vec{z}$ can be generated by $\vec{v}_1$ and $\vec{v}_2$, then find value of 'h'.