1. Consider the following matrix in reduced row echelon form (RREF).

\[
\begin{bmatrix}
1 & 0 & 0 \\
0 & 1 & 0 \\
0 & 0 & 1 \\
\end{bmatrix}
\]

(a) If the above matrix is a coefficient matrix for a system of equations, then what can you say about the solution of the system? (ie. Will it have a solution? One? Infinitely many? Any restrictions on what the augmented column could be?)

(b) If the above matrix is an augmented matrix for a system of equations, then what can you say about the solution of the system?

2. Consider the following vectors.

\[\vec{v}_1 = \begin{bmatrix} 1 \\ 2 \\ 0 \end{bmatrix}, \vec{v}_2 = \begin{bmatrix} 0 \\ 1 \\ 1 \end{bmatrix}\]

(a) Give two vectors (besides \(\vec{v}_1\) and \(\vec{v}_2\)) that are in the Span\(\{\vec{v}_1, \vec{v}_2\}\). Show your work.

(b) For what values of \(h\) is \(\vec{y} = \begin{bmatrix} 1 \\ h \\ 4 \end{bmatrix}\) a linear combination of \(\vec{v}_1\) and \(\vec{v}_2\)? Show your work.