Quiz 8

Name : _____

SID : _____

1. Is $\begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix}$ an eigenvector of $\begin{bmatrix} 2 & 6 & 7 \\ 3 & -1 & -3 \\ 4 & 6 & 4 \end{bmatrix}$?

   If so, what is the eigenvalue associated with the eigenvector?

2. Consider the matrix
$$A = \begin{bmatrix} 1 & 0 & 2 \\ 1 & -1 & -1 \\ 3 & 0 & 2 \end{bmatrix}$$

1) Find all eigenvalues. **2)** Find a basis for each eigenspaces.