

Name (Last, First): _____

Student ID: _____

1) Consider the matrix

$$A = \begin{bmatrix} 4 & 1 & 1 \\ -2 & 1 & 0 \\ -2 & 0 & 1 \end{bmatrix}$$

Find a basis for the eigenspace with eigenvalue $\lambda = 1$.

2) Find the characteristic equation and the eigenvalues of the matrix

$$A = \begin{bmatrix} 1 & 1 \\ 4 & 1 \end{bmatrix}$$