

Quiz 7

1. For each vector below, determine if the vector is an eigenvector of A and if it is state the associated eigenvalue. (12 pts.)

$$A = \begin{bmatrix} -2 & -2 & 2 \\ -9 & -5 & 17 \\ -3 & 1 & 11 \end{bmatrix}, \quad v_1 = \begin{bmatrix} 0 \\ 0 \\ 0 \end{bmatrix}, v_2 = \begin{bmatrix} 0 \\ 1 \\ 1 \end{bmatrix}, v_3 = \begin{bmatrix} 1 \\ 3 \\ 0 \end{bmatrix}, v_4 = \begin{bmatrix} 3 \\ -2 \\ 1 \end{bmatrix}.$$

2. Find all eigenvalues of $A = \begin{bmatrix} 8 & -9 \\ 6 & -7 \end{bmatrix}$. (8 pts.)