

Math 205 Quiz 8

Name:

1. Is $\vec{x} = \begin{bmatrix} 1 \\ 4 \end{bmatrix}$ an eigenvector of $A = \begin{bmatrix} -3 & 1 \\ -3 & 5 \end{bmatrix}$? Explain.

2. Find the characteristic equation for A and determine the eigenvalues of A .

3. Is $\lambda = 1$ an eigenvalue of $B = \begin{bmatrix} 3 & 2 \\ 3 & 8 \end{bmatrix}$? Explain.

4. The eigenvalues of C are $\lambda = 1, 5$.

$$C = \begin{bmatrix} 2 & 2 & -1 \\ 1 & 3 & -1 \\ -1 & -2 & 2 \end{bmatrix}$$

If possible, determine P and D such that $C = PDP^{-1}$.