Math 54 Lec 006 Quiz 6

Friday, July 13, 2018

Justify your assertions; include detailed explanation, and show your work. Closed book exam, no sheet of notes and no calculator. This quiz is worth 9 points total.

1. (3 points) Let
$$A = \begin{pmatrix} -3 & 0 & 4 \\ 0 & -1 & 0 \\ -2 & 7 & 3 \end{pmatrix}$$

Find the characteristic polynomial, and find all real eigenvalues with corresponding multiplicities.

2. (3 points) True of False: If A is diagonalizable and invertible, then A^{-1} is also diagonalizable.

3. (3 points) Determine if the matrix
$$\begin{pmatrix} 1 & 1 & 1 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{pmatrix}$$
is diagonalizable. If so, diagonalize it. If not, explain why.