King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 260 (141) Sec 03 - Quiz 3

Name: ID: Serial No.:

1. Find the eigenvalues and eigenvectors of $A = \begin{bmatrix} 1 & 4 \\ -4 & 1 \end{bmatrix}$

2. Given that $\lambda_1 = 4$ and $\lambda_2 = 1$ are the eigenvalues of a matrix $A = \begin{bmatrix} 2 & 2 \\ 1 & 3 \end{bmatrix}$. Use Cayley-Himlton theorem to find A^{-1}.

3. Given the characteristic polynomial $p(\lambda) = (\lambda + 1)^2(\lambda - 5)$ of the matrix $A = \begin{bmatrix} 1 & -2 & 2 \\ -2 & 1 & -2 \\ 2 & -2 & 1 \end{bmatrix}$. Is A diagnolizable. Justify your answer.