Name:_____QUIZ NO:5 Section 5 ID_____Points:10

Q1. The two complex conjugate eigenvalues of the matrix $\begin{pmatrix} 0 & 8 \\ -2 & 0 \end{pmatrix}$ are $\lambda_{1,2} = \pm 4i$. Find two associated eigenvectors.

Q2. The eigenvalues of $A = \begin{pmatrix} 5 & -4 \\ 2 & -1 \end{pmatrix}$ are $\lambda_1 = 1$ and $\lambda_2 = 3$. The eigenvector associated with $\lambda_1 = 1$, is $\underline{v}_1 = (1,1)^T$ and the eigenvector associated with $\lambda_2 = 3$, is $\underline{v}_2 = (2,1)^T$. Diagonalize the matrix A.

Q3. Find A^2 when $A = \begin{pmatrix} 5 & -4 \\ 2 & -1 \end{pmatrix}$. The eigenvalues and eigenvectors of the matrix are: $\lambda_1 = 1$, $\underline{v}_1 = (1,1)^T$ and $\lambda_1 = 3$, $\underline{v}_2 = (2,1)^T$.