

Problem 1

Let $A = \begin{bmatrix} 1 & 2 & 2 \\ 1 & 2 & 3 \\ 0 & -1 & 0 \end{bmatrix}$. Find the eigenvalues and eigenvectors of A . For each eigenvalue, give a basis for the associated eigenspace.

Problem 2

Let $A = \begin{bmatrix} 4 & 0 & 1 \\ -2 & 1 & 0 \\ -2 & 0 & 1 \end{bmatrix}$. Find the eigenvalues and eigenvectors of A . For each eigenvalue, give a basis for the associated eigenspace.

Problem 3

Let $A = \begin{bmatrix} 3 & -2 \\ 4 & -1 \end{bmatrix}$. Find the eigenvalues and eigenvectors of A . For each eigenvalue, give a basis for the associated eigenspace.

Problem 4

Let $A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 1 \\ 0 & -1 & 0 \end{bmatrix}$. Find the eigenvalues and eigenvectors of A . For each eigenvalue, give a basis for the associated eigenspace.