CSE 151A - Discussion 10

REVIEW : TBD

Problem 1.

What are the eigenvectors and eigenvalues of $A = \begin{pmatrix} 2 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 3 \end{pmatrix}$?

Problem 2.

Given $A = \begin{pmatrix} 1 & -2 \\ -2 & 1 \end{pmatrix}$ and eigenvectors $u_1 = \frac{1}{\sqrt{2}} \begin{pmatrix} 1 \\ 1 \end{pmatrix}$ and $u_2 = \frac{1}{\sqrt{2}} \begin{pmatrix} -1 \\ 1 \end{pmatrix}$, first confirm that the eigenvectors are orthonormal, then compute the corresponding eigenvalues.