

Problems from Weber and Arfken:

W&A 3.5.8

W&A 3.5.12

W&A 3.5.15

W&A 3.5.30

Problem 5

Find the eigenvalues and normalized eigenvectors of the following matrix. (i is the imaginary unit: $i^2 = -1$.)

$$\mathbf{M} = \begin{pmatrix} 1 & -i & 0 \\ i & 1 & -i \\ 0 & i & 1 \end{pmatrix}$$