

In Class Practice ProblemsIntroductory Problem:

Use built-in functions from SciPy to compute the eigenvalues and eigenvectors of a square matrix.

- 1) Find the eigenvalues and eigenvectors for the following matrix

$$\begin{bmatrix} 6 & 10 & 6 \\ 0 & 8 & 12 \\ 0 & 0 & 2 \end{bmatrix}$$

- 2) Write an iterative algorithm that implements the power method to find the dominant eigenvalue and its corresponding eigenvector.
- 3) Write a program that implements the QR algorithm using the Gram-Schmidt process.