Worksheet 9

Problem 1 Using the **Power Method with scaling** find the dominant eigenvalue and the corresponding eigenfunction of the matrix $\begin{pmatrix} 1 & 3 \\ 2 & 2 \end{pmatrix}$.
Using the **Method of Deflation** find its nondominant eigenvalue and the eigenfunction.
Generalize the code for $N \times N$ matrices.

Problem 2 Using **QR decomposition** obtain the eigenvalues of the matrix $\begin{pmatrix} 1 & 3 & 4 \\ 3 & 1 & 2 \\ 4 & 2 & 1 \end{pmatrix}$.
Generalize the code for $N \times N$ matrices.