

ASSIGNMENT 1

Due September 23, 2003

Problem 1

1. Write a Matlab program to implement normalized power iteration to compute the dominant eigenvalue and a corresponding normalized eigenvector of the matrix

$$\mathbf{A} = \begin{bmatrix} 2 & 3 & 2 \\ 10 & 3 & 4 \\ 3 & 6 & 1 \end{bmatrix}.$$

As a starting vector, take $\mathbf{x}_0 = [0 \ 0 \ 1]^T$.

2. Use Matlab's *eig* function to compute all the eigenvalues and eigenvectors of the matrix, and compare the results with those obtained in part 1.