a. Using the Jacobi method with a tolerance of epsilon = 10^-6,

the eigenvalues of matrix A are: [-0.4213113  5.30785756 -0.13654627]

The corresponding eigenvectors are:

[-0.77264198 -0.59020967  0.23383097]

[ 0.13876148 -0.51643129 -0.84501123]

[ 0.61949143 -0.62044441  0.48091486]

b. The matrix A is reduced to a tridiagonal matrix B using the Householder method.

The resulting tridiagonal matrix B is:

[ 1.59    -2.71901 -0.     ]

[-2.71901  3.31634  0.12811]

[-0.       0.12811 -0.15634]

c. The eigenvalues of the tridiagonal matrix B obtained in (2b),

using the QR method, are: [ 5.3078582  -0.42131367 -0.13654454]