

a. Tridiagonalize matrix A using Householder method.

The resulting tridiagonal matrix C is:

[3. -3. 0. 0.]

[-3. 4. 3.16227766 0.]

[0. 3.16227766 2. 1.]

[0. 0. 1. -2.]

b. The transformation matrix P:

[1. 0. 0. 0.]

[0. -0.66666667 0.52704628 -0.52704628]

[0. -0.33333333 -0.84327404 -0.42163702]

[0. -0.66666667 -0.10540926 0.73786479]