

Prof. Ming Gu, 861 Evans, tel: 2-3145
Office Hours: MWF 3:00-4:00PM
Email: mgu@math.berkeley.edu
<http://www.math.berkeley.edu/~mgu/MA128BSp2009>

Math128B: Numerical Analysis

Programming Assignment #3, Due April 13

In this project we solve the symmetric eigenvalue problem.

1. Develop a matlab program to reduce a symmetric $n \times n$ matrix A into symmetric tridiagonal form using Householder transformations.
2. Develop a matlab program to find all eigenvalues of A with your program above and the QR routine on the class website.
3. For $n = 200, 400, 600$, compute eigenvalues of symmetric random matrices using your code. Compare the accuracy and efficiency of your method with the matlab function `eig`.

You should:

1. Write a report to summarize your comparisons.
2. Email your report and your matlab code to Scott by 11:59PM, April 13.