Homework 5

MATH 5610 FALL 2016

NAME: GRADE:_____

Problem 1. Implement an LU factorization routine with scaled partial pivoting. Use the test algorithm from Problem 5 in Homework 4 to test the code you write for this problem.

Problem 2. Implement scaled partial pivoting into the Gaussian Elimination and Back-substitution routines and use the test algorithm from Problem 5 in Homework 4 to make sure the code works.

Problem 3. Test the pivoting strategy by using the algorithm from Problem 5 in Homework 4 without the modification to the main diagonal of the random matrix. Make sure the matrix is symmetric. One way to see if pivoting was used is to print out the index map for the rows.

Problem 4. Complete Problem 5 at the end of Chapter 5.

Problem 5. Complete Problem 6 at the end of Chapter 5.
