Homework 9

MATH 5610 FALL 2016

NAME: GRADE:_____

Problem 1. Implement the power method for computing the largest eigenvalue (in magnitude) of a square matrix. Test your code on the same diagonally dominant matrices that used in previous assignments.

Problem 2. Graph the error as a function of the number of iterations applied in the power method. Also, produce a graph of the number of iterations as a function of the size of the matrix.

Problem 3. Implement the inverse power method using the lu-factorization that you have already programed up. Test your code on the same matrices from above.

Problem 4. Produce the same graphics as in Problem 2 for the inverse power iteration code in Problem 3.

Problem 5. Complete Exercise 2. on page 245 of your textbook.
