

# Homework Assignment 6

## Due on Tuesday 5/6

### Programming Problems:

1. Implement GMRES and CG to solve  $Ax = b$  iteratively. For both codes, take  $A$ ,  $b$  and tolerance  $tol$  as input and output approximate solution  $x_n$  and 2-norm of residual  $\|r_n\|$ . Use  $\|r_n\| < tol$  as stopping condition. Submit your codes through iLMS.

### Writing Problems:

Do the following exercise problems in the text book by Trefethen and Bau,

Exercise 35: 35.1, 35.2, 35.3, 35.6

Exercise 38: 38.2, 38.4, 38.5, 38.6