MATH 401, HW 5 and 6, FALL 2015

1. Write your own Matlab code for transformation of a matrix to its reduced row echelon form. (25 points)

2. Adapt the code from problem 1. to a code that finds the inverse of a matrix if it is invertible, and does nothing if it is singular. (15 points)

3. Apply the inverse algorithm to 2 invertible 10×10 and 2 singular 10×10 matrices of your choice. Compare the performance of your algorithm with that of Matlab's built-in inverse function. (10 points)

In the above you are not allowed to use any Matlab shortcut functions (no rref, rank, inv, etc etc). Only arithmetic operations. If you have any doubts about whether a specific command is OK, please ask me.

For administrative purposes problem 1 will count as HW 5, and problems 2 and 3 as HW 6. The whole assignment is due on October 19th (Monday).