Lab 9 Assignment

Due on 11/20 at noon on Blackboard.

Submit your m-file and a diary that shows how you tested the code. **Use the algorithm for Gram-Schmidt that was covered in the lab walkthrough and not the algorithm that is written in the book.**

Write an m-file `grams.m` to perform the Gram-Schmidt process on the columns of a matrix A with an arbitrary number of columns (the input) and return a matrix Q whose columns are the resulting vectors (output). Test your code on the following matrix and check the output is orthonormal:

$$A = \begin{pmatrix} 1 & -1 & 7 & 1 \\ 0 & 6 & -3 & 3 \\ -7 & -7 & -7 & 4 \\ -9 & 6 & 0 & -1 \end{pmatrix}$$

Note: You can use Q' for the transpose command!

Check that your answer is orthonormal! Think about what it means to be orthonormal in terms of a matrix and what operation can show this.