Homework 2, CS 302
Naive Gaussian elimination.

Due – Wed. Jan. 28, computer programs to be submitted to Wolfware Classic, for handwritten portions, 6 PM in class

1. in octave or matlab, randomly generate a 6 by 6 matrix $A$. Do Guassian elimination by using rank one updates.

\[ A(i+1:n,:) < -A(i+1:n,:) - l_i(i+1:n)u_i, \quad i = 1, 2, 3, 4, 5 \]

where $u_i$ are row vectors and $l_i$ are column vectors of length 6. Complete the collection with $l_6$ and $u_6$ and show that

\[ A - l_1u_1 - l_2u_2 \ldots - l_6u_6 \]

is almost zero.

2. Write a matlab or octave code to form $L$ and $U$ such that $A - LU$ is nearly zero ($L$ lower triangular, $U$ upper triangular) for an input $n \times n$ matrix $A$. 
