ASE 211 Homework 3

Due: 12:00 noon, Friday, February 11. Put assignments in the drawer on the third floor of WRW marked 'ASE 211.'

1. By hand, use Gaussian elimination to find the solution of the problem:

$$A\mathbf{x} = \begin{bmatrix} 3 & 2 & -1 \\ 6 & 1 & 0 \\ -3 & 6 & 4 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 4 \\ 8 \\ 21 \end{bmatrix} = \mathbf{b}.$$

2. Solve the problem above using Matlab. Enter the matrix A and the column vector $\mathbf{b}$, and use the command

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A\b
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to solve for $\mathbf{x}$.

3. Solve problem A3.6 in the book using Matlab.

4. Suppose we change the matrix A in problem 1 as follows:

$$A = \begin{bmatrix} 3 & 2 & -1 \\ 6 & 1 & 0 \\ -3 & 1 & -1 \end{bmatrix}.$$

By hand, attempt to solve the system in problem 1 with this matrix. What happens?

Hand in all matlab diaries.