18.06 Problem Set 1

Due Thursday, 16 September 2010 at 4pm in the undergrad math office. Please note that the problems from the textbook are out of the 4th edition: make sure to check that you are doing the correct problems. For MATLAB problems, please include a printout of your code with your problem set. You can type `diary(''filename'')` at the beginning of your session to save a transcript, and `diary` off when you are done.
Each Problem worth 10 points.

1. Find a solution for x,y,z to the system of equations

$$\begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 10 \end{pmatrix} \begin{pmatrix} x \\ y \\ z \end{pmatrix} = \begin{pmatrix} 3\,e + \pi + 2\,\sqrt{2} \\ 6\,e + 4\,\pi + 5\,\sqrt{2} \\ 10\,e + 7\,\pi + 8\,\sqrt{2} \end{pmatrix}$$

2. Do problem 11 from section 2.1.

3. Do problem 26 from section 2.1.

4. Do problem 7 from section 2.2.

5. Do problem 31 from section 2.2.

6. Do problem 21 from section 2.3.

7. Do problem 23 from section 2.4.

8. Do problem 32 from section 2.4.

9. Do problem 6 from section 2.5.

10. In the language of your choice, write a function "rowop" that takes a matrix A and replaces the second row with the original second row minus 10 times the first row.

    (*Hint:*In Matlab you can create a file with the name "rowop.m" with header function $B = \text{rowop}(A)$ Useful commands are $A(2,:) * 10$ and $A(2,:) =)$