Fall 2012 MATLAB Assignment 3

Work the following problems (NOTE: these are RELATED TO the corresponding page and problem number from Gilat. Do NOT work the actual problems from the Lab Manual, or you will receive NO CREDIT!)

1. **g210x08**: Use loops to create a 3×5 matrix in which the value of each element is the difference between the indices divided by the sum of its indices (the row number and column number of the element). For example, the value of the element $(2, 5)$ is $(2 - 5)/(2 + 5) = -0.4286$.

2. **g211x11**: Write the program indicated in the problem and use it to solve the following equations:

   (a) $-2x^2 + 16x - 32 = 0$

   (b) $8x^2 + 9x + 3 = 0$

   (c) $3x^2 + 5x - 6 = 0$
   NOTE: instead of asking the user to input the coefficients (which is in the skipped chapter 4), create a 3x3 matrix containing the data-each row corresponding to a problem. Then use a loop to execute the problem 3 times, using the appropriate row each time.

3. **g213x20**: Write a program in a script file that calculates the cost of renting a car according to the following price schedule:

Type of car	Rent 1-6 days	Rent 7-27 days	Rent 28-60 days
Class 3	$27 per day	$162 + $25/additional day	$662 + $23/additional day
Class 2	$34 per day	$204 + $31/additional day	$824 + $28/additional day
Class 1	Not available	$276 + $43/additional day	$1136 + $38/additional day

First create a matrix for the following data: Class 3 rented for 3 and 50 days, Class 2 for 20 and 61 days, and Class 1 for 18 and 60 days. Each row of the matrix contains the type of car and rental period. If a period is longer than 60 days, a message "Rental is not available for more than 60 days" is displayed. If a rental period of less than 7 days is read for Class 1, a message "Class 1 cars cannot be rented for less than 7 days" is displayed.
After entering the data in the program, use a loop to run it 6 times to display the cost for each case.

4. **g215x27**: Write a program that finds all the prime numbers between 1 and 80. List the prime numbers in a single row vector.

5. Also work **s593x22** (NOTE: Do not find the exact sum; just approximate it using the 100th partial sum).