Summer 2014 MATLAB Assignment 1

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. **g028x07** (Assigning variables: see pp16-19 and basic functions: see pp14-15):
   Define the variable x as $x = 9.75$, then evaluate the following:

   (a) $4x^3 - 14x^2 - 6.32x + 7.3$

   (b) $\dfrac{e^{\sqrt{3}}}{\sqrt[3]{0.02 \cdot 3.1^2}}$

   (c) $\log_{10}((x^2 - x^3)^2)$

2. **g034x40** (Assigning variables: see pp16-19 and basic functions: see pp14-15):
   The distance d from a point (x_0, y_0) to a line $Ax + By + C = 0$ is given by $d = \dfrac{|Ax_0 + By_0 + C|}{\sqrt{A^2 + B^2}}$.
   Determine the distance from the point $(3, -4)$ to the line $2x - 7y - 10 = 0$. First define the variables A, B, C, x_0, and y_0, then calculate d.

3. **g055x07** (equally spaced vectors: see pp 37-38):
   Create a row vector in which the first element is 0, the last element is 42, with an increment of 3 between the elements $\langle 0, 3, 6, \cdots, 42 \rangle$

4. **g093x32** (matrices: see pp39-40 and solving equations with matrices: see pp71-72):
   Solve the following system of five linear equations:

$$1.5x - 2y + z + 3u + 0.5w = 7.5$$
$$3x + y - z + 4u - 3w = 16$$
$$2x + 6y - 3z - u + 3w = 78$$
$$5x + 2y + 4z - 2u + 6w = 71$$
$$-3x + 3y + 2z + 5u + 4w = 54$$