**WEEK 11 & WEEK 12 TASKS**

**Use matlab to do the following tasks:**

* Specify the matrix



into MATLAB workspace.

* Solving Simultaneous Equations:  
  A general system of linear equations can be expressed in terms of a co-efficient matrix A, a right-hand side (column) vector b and an unknown (column) vector x as follows:  
  A \* x = b

Given that  
3v -3w +6x -2y +z = 14  
3v -6w +x -y +z = 25  
2v -4w +4x -4y +3z = 5  
3v -6w +5x -y +2z = 30  
2v -4w +9x +y +z = 30  
Solve for v, w, x, y and z using the matrix functions

**// Solution**   
Enter the following in the Command Editor:

A = [3 -3 6 -2 1; 3 -6 1 -1 1; 2 -4 4 -4 3; 3 -6 5 -1 2; 2 -4 9 1 1];

b = [14; 25; 5; 30; 30];

x = inv(A)\*b

Solve these quadratic equations:

* 2a + 1b + 0c + 6d = 64

5a + 2b + 0c + 0d = 37

0a + 7b + 2c + 2d = 66

0a + 0b + 8c + 9d = 104

* 3v -3w +6x -2y +z = 14  
  3v -6w +x -y +z = 25  
  2v -4w +4x -4y +3z = 5  
  3v -6w +5x -y +2z = 30  
  2v -4w +9x +y +z = 30
* Solve the following quadratic equation using matlab:
* 2x2+x-1=0
* 7x2+5x+10=0
* 2x2 − x + 2y2 − 8y = 0
* x2 + 2x + y2 − 6y + 1 = 0
* Use MATLAB and create the plot of the following line defined by the equation f(x) = y = 2x − 1 over the range −3 ≤ x ≤ 2 by

1. Using the plot command with the argument consisting of two points on the Cartesian plane
2. Using the plot command with arguments x and f(x)

* Use MATLAB to obtain overlay plots of the following functions:

[y1 = 2.5 cos(x)] versus x and [y2 = 3.5 sin(x)] versus over the domain 0 ≤ x ≤ 2π using 50 linearly spaced points

1. Insert the title
2. Legend the plot
3. Label both axis
4. Insert the grid
5. Insert the hold

* Using the excel data provided plot the different rotor angles against time on the same axis and:

a. Insert the title

b. Legend the plot

c. Label both axis

d. Insert the grid