York University
Lassonde School of engineering
EECS2200
HW 2

1. Consider the following polynomials

    a) $p_1(s)=s^3 + 12s^2 +s +5$
    b) $p_2(s) = \ln s + e^{0.1s} + 4s^3$

Write few Matlab expressions to calculate the values of the above polynomials at
$s = 1,2,5,3,7$

2. Solve the following system of equations using Matlab

    $x_2 - 3x_3 = -7$
    $2x_1 + 3x_2 - x_3 = 9$
    $4x_1 + 5x_2 - 2x_3 = 15$

3. Consider the following matrices

$$A = \begin{bmatrix} 1 & 0 & 2 \\ 2 & 5 & 4 \\ -1 & 8 & 7 \end{bmatrix}, B = \begin{bmatrix} 7 & 8 & 2 \\ 3 & 5 & 9 \\ -1 & 3 & 1 \end{bmatrix}$$

Using Matlab, find the following

    a) $A+B$
    b) AB
    c) A^2
    d) A^3
    e) A^T
    f) $B^T A^T$
    g) A^{-1}

4. Use Matlab to plot the following 2 functions
    a) $f(t)=t \cos t \qquad 0 \le t \le 10\pi$

    $$x = e^t$$

    b) $\qquad\qquad\qquad\qquad 0 \le t \le 2\pi$

    $$y = 100 + e^{3t}$$