Problem1(20%)

(a) The Laplace transformation is limited to what kind of Equation?

(b) Please Solve the Equations:

4y"+(pie)^2y=0,y(0)=2,y'(0)=0

Y"-4y'+3y=2t-8/3, y(0)==,y'(0)=-16/3

Problem2(20%)

please use the matrix of A to find the answer of(a) and (b)

(a) A= [-2 -1;5 2] (Matlab Matrix expression) find eigenvalues of A?

(b) A=[2 1 0;3 2 0;0 0 4](Matlab Matrix expression),if Lambda=4 is one of the eigenvalues, Please find the two others ?

Problem3(20%)

(a) Please find the inverse of b when b=[2 3 1;1 2 3;3 1 2]

(b) d=[d11 0 0 0 0--;0 d22 0 0---0;------;0 0 ---dnn],please find the inverse of a diagonal matrix d=?

Problem4 (20%)

Calculate the transpose of matrix A and B----AT and BT,please
A=[1 0;1 1], B=[3 3 3;2 2 2],then AB=? Find BT and AT, then find ATBT, BTAT, what is your conclusion?

Problem5(20%)

Solve the linear system:

3X1-X2+2X3=12

X1+2X2+3X3=11

2X1-2X2+X3=2

Using Gaussian Elimination and back substitution,(hint: find the augmented matrix first)