Introduction to Programming and Algorithms – Pop Quiz #1

05.04.2006

1. Enter the following matrices in MATLAB

$$A=\begin{bmatrix}1 & 2 & 3\\ 4 & 5 & 6\\ 7 & 8 & 9\end{bmatrix} \qquad B=\begin{bmatrix}3\\ 2\\ 1\end{bmatrix} \qquad C=\begin{bmatrix}2 & 3 & 4\end{bmatrix} \qquad D=\begin{bmatrix}0.00\\ 0.01\\ .\\ .\\ 20.00\end{bmatrix}$$

$$E=\begin{bmatrix}20.00 & 19.90 & 19.70 & 19.60 & . & . & . & 12.00\end{bmatrix}$$

2. $P(x)=2x^3-4x^2+4x-24$

   a. Calculate the roots of P(x)
   b. P(127) = ?
   c. plot P(x) from x=0 to x=25 (x increment = 0.01)

3. Solve the following set of equations.

   23x+32y-40z=78
   42x+26y= -23
   23x+12z= 18

4. A file called **sales.txt** contains the annual sales figures of cars and trucks between 1996 and 2000.

Year	Cars	Trucks
1996	2200	1550
1997	2380	1230
1998	2440	2300
1999	2555	4700
2000	2680	2003

   a. After deleting the header line, load this file into matlab.
   b. Plot the annual sale figures for cars
   c. Plot the annual sale figures for trucks
   d. Plot the annual sale figures for total number of vehicles sold
   e. Use the subplot function to present these plots seperately
   f. Use the hold function to present these plots in the same figure.

5. plot f(x) = 2Sin^2x -1 from x= –pi to x= pi

Duration: 35 Minutes