Plotting Signals:

1. Sketch the following signals:

a)

$$x(t) = \begin{cases} 0 & \text{if} \quad t < -4 \\ t+2 & \text{if} \quad -4 \le t < 3 \\ t-2 & \text{if} \quad 3 \le t \end{cases}$$

b) y(t) = x(t-1) where x(t) is defined in part a)

c)

$$x[n] = \begin{cases} 0 & \text{if} \quad n < 2 \\ 2n-4 & \text{if} \quad 2 \le n < 4 \\ 4-n & \text{if} \quad 4 \le n \end{cases}$$

d) y[n] = x[n+1] where x[n] is defined in part c)

2. Write MATLAB code to plot the signals in Problem 1. Scale your time axis so that a sufficient amount of the signal is being plotted. Use subplot to give 4 plots per page; label your plots with 'Time (sec)' on the x-axis for the continuous time signals and 'n' for discrete time signals. The y-axis should be labeled 'x(t)' or 'x[n]'; the title should be the problem number, for example 'a)'.

3. Use MATLAB to plot the following signals. Use the same instructions on plotting as given in Problem 2.

a) $x(t) = 4\cos(5\pi t - \pi/4)$
b) $x[n] = 4\cos(\pi n)$ (Use the command stem to plot discrete-time signals.)
c) $x[n] = 2\sin(3n)$
d) $x(t) = \cos(4t) + 2\sin(8t)$
e) $x(t) = 3\cos(4t) + \sin(\pi t)$