ECE 212 Laboratory Experiments #3

Preparation:

1. Draw the following functions.
   a) $x[n]=\delta[n]+\delta[-n+10]+\delta[n-15]$; b) $y[n]=\delta[n-3]+u[n-4]$;

2. $x(t)=r(t+1)-2*r(t-1)$ \(-1 \leq t \leq 1\) draw $x(t)$ function, draw the following functions.
   a) $x(2t)$; b) $x(-2t)$; c) $x(2t-1)$; d) $x(-2t-6)$

Experiment:

1. Write matlab programs to draw the above functions.
2. An exponentially damped sinusoid is defined by, $x(t)=20\sin(2\pi*1000t-\pi/3)e^{-at}$
   Where the exponential parameter $a$ is variable, taking values $a=500, 750, 1000$. Using matlab plot the $x(t)$ for each of the $a$ values and look at the affect of $a$ on the signal $x(t)$ for \(-2 \leq t \leq 2\)
3. Two functions are given $x[n]=u[n-10]+r[-n+3]+\delta[n-5]$; $y[n]=r[n]+r[-n]$
   Plot the following functions graphs
   a) $x[n]+y[n]$
   b) $x[n]-y[n]$
   c) $x[n]y[n]$
   d) $x[n]^2+y[n]^3$
   e) $2x[n]+3y[-2n+4]^2$

Report: In your report indicate the vector lengths you used while plotting the functions.

Good Luck: Orhan Gazi