East West University
Department of Computer Science and Engineering
Fall-2019
Course: CSE248 Signals and Systems, Section: 1, 2 & 3

Assignment #01

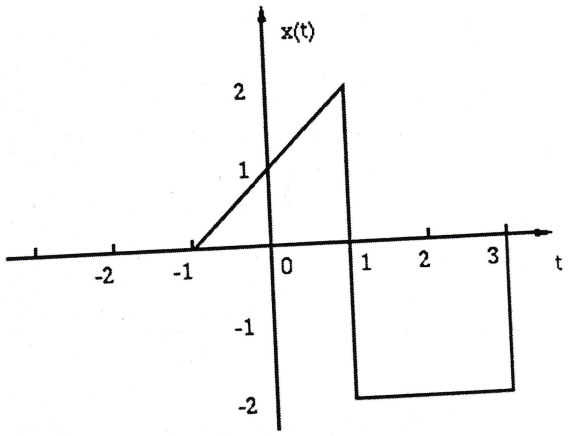
Problem Statement: Any time varying physical phenomenon that can convey information is called signal. A wide variety of signals are of practical importance in describing physical phenomena. A number of fundamental transformations of the independent variable of signal are performed such as: time shifting, reflection and time scaling operation. The aim of these assignment is to generate any random complex aperiodic signal denote as $x(t)$ and perform the following signal transformations using MATLAB tools:

i. $x(-t)$
ii. $x(t-3)$
iii. $x(t+2)$
iv. $x(t/3)$
v. $x(2t)$
vi. $x(\frac{t}{3}+2)$
vii. $x(2t-3)$
viii. Even function, $x_e(t) = \frac{1}{2}[x(t)+x(-t)]$
ix. Odd function, $x_o(t) = \frac{1}{2}[x(t)-x(-t)]$

Note: No individual assignment will be considered. You must form a group of fixed two members and generate your own signal to perform the task. After the completion of the assignment, each group should verify their outcome to the course instructor.

To get introduce with MATLAB for signal generation and transformation, you may consider the following example and practice at your own station.

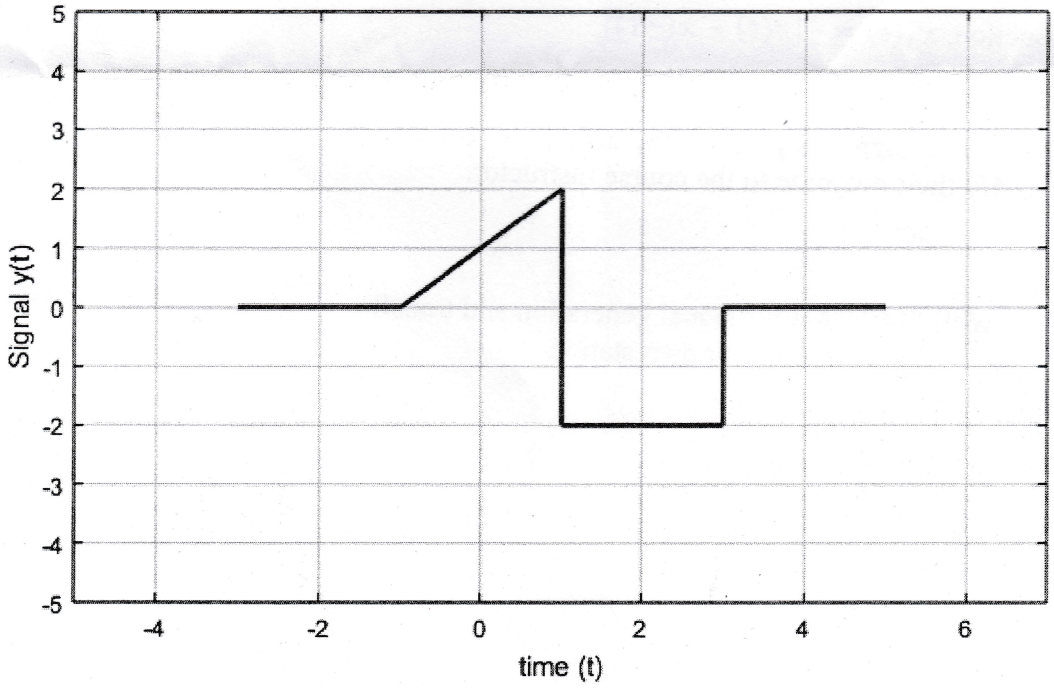
$$x(t) = \begin{cases} t+1; & -1 \le t \le 1 \\ -2; & 1 \le t \le 3 \\ 0; & otherwise \end{cases}$$



Sample Code:

```
clear all;
close all;
t=-3:0.0001:5;
x=zeros(size(t));
t1=t<-1;
x(t1)=0;
t2=t>=-1 & t<1;
x(t2)= t(t2)+1;
t3=t>=1 & t<3;
x(t3)=-2;
t4=t>=3;
x(t4)=0;
plot(t,x)
xlim([-5 7]);
ylim([-5 5]);
grid on;
```

Result:



****Best of Luck & Have Good Life****