clear all;

clc;

close all;

%% a

Fs = 0.25\*1000;

Ts = 1/Fs;

t = [0:Ts:1];

%% b

x1 = 2.3\*exp(2\*t);

x2 = 1.2\*cos(50\*pi\*t);

x3 = x1 + x2;

h = -5\*(t-2)/2;

y1 = x1.\*h;

y2 = x2.\*h;

y3 = x3.\*h;

%% c

figure(1);

subplot(2,1,1)

plot(t,x1);

xlabel('time (sec)');

ylabel('x1(t)');

title('x1(t) signal');

subplot(212)

plot(t,x2);

xlabel('time (sec)');

ylabel('x2(t)');

title('x2(t) signal');

figure(2)

plot(t,x3);

xlabel('time (sec)');

ylabel('x3(t)');

title('x3(t) signal');

figure(3)

subplot(2,1,1)

plot(t,y1);

xlabel('time (sec)');

ylabel('y1(t)');

title('y1(t) signal');

subplot(2,1,2)

plot(t,y2);

xlabel('time (sec)');

ylabel('y2(t)');

title('y2(t) signal');

figure(4)

plot(t,y3);

xlabel('time (sec)');

ylabel('y3(t)');

title('y3(t) signal');

figure(5)

subplot(2,1,1)

plot(t,y3);

xlabel('time (sec)');

ylabel('y3(t)');

title('y3(t) signal');

subplot(2,1,2)

plot(t,y1+y2);

xlabel('time (sec)');

ylabel('y1(t) + y2(t)');

title('y1(t) + y2(t) signal');