SNS-EEC LAB COMPRE

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1. **a) Code:**

t = -4:0.001:4;

% 1a) the signal x(t)

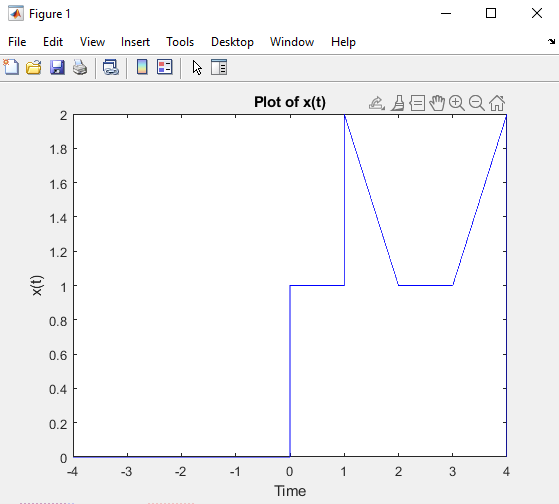
x = (t<0).\*0 + (t>=0 & t<1).\*1 + (t>=1 & t<2).\*(-t+3) + (t>=2 & t<3).\*1 + (t>=3 & t<4).\*(t-2) + (t>=4).\*0;

plot(t, x, 'b');

title("Plot of x(t)");

xlabel("Time"), ylabel("x(t)");

**Output:**



**I, II, III, IV Answers:**

**Code:**

t = -4:0.001:4;

% 1a) the signal x(t)

x = (t<0).\*0 + (t>=0 & t<1).\*1 + (t>=1 & t<2).\*(-t+3) + (t>=2 & t<3).\*1 + (t>=3 & t<4).\*(t-2) + (t>=4).\*0;

clf

subplot(411)

plot(t, x, 'b');

title("Plot of x(t)");

xlabel("Time"), ylabel("x(t)");

% I. x(t-1)

t1 = t-1;

x1 = (t1<0).\*0 + (t1>=0 & t1<1).\*1 + (t1>=1 & t1<2).\*(-t1+3) + (t1>=2 & t1<3).\*1 + (t1>=3 & t1<4).\*(t1-2) + (t1>=4).\*0;

% II. x(2t+1)

t2 = 2\*t+1;

x2 = (t2<0).\*0 + (t2>=0 & t2<1).\*1 + (t2>=1 & t2<2).\*(-t2+3) + (t2>=2 & t2<3).\*1 + (t2>=3 & t2<4).\*(t2-2) + (t2>=4).\*0;

% III. x(-t+4)

t3 = -t+4;

x3 = (t3<0).\*0 + (t3>=0 & t3<1).\*1 + (t3>=1 & t3<2).\*(-t3+3) + (t3>=2 & t3<3).\*1 + (t3>=3 & t3<4).\*(t3-2) + (t3>=4).\*0;

subplot(412)

plot(t, x1);

text(0, 2.15, "Plot of x(t-1)");

xlabel("Time"), ylabel("x(t-1)");

subplot(413)

plot(t, x2);

text(0, 2.15, "Plot of x(2t+1)");

xlabel("Time"), ylabel("x(2t+1)");

subplot(414)

plot(t, x3);

text(0, 2.15, "Plot of x(-t+4)");

xlabel("Time"), ylabel("x(-t+4)");

**Output:**

