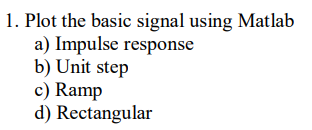
Lab2: DSAP 075BCT092



1. **Code:**

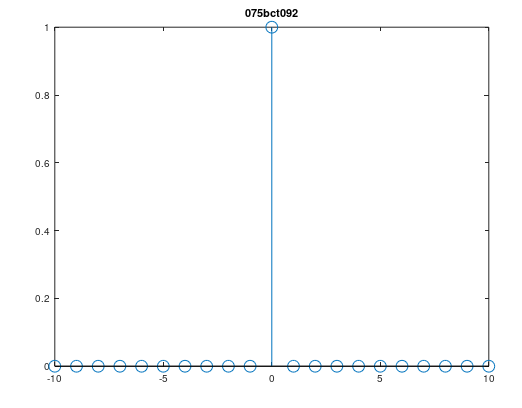
t=-10:10;

s = (t==0);

stem(t,s);

title('075bct092');

**Output:**



1. **Code:**

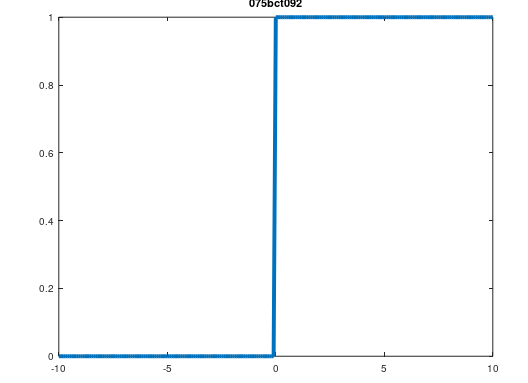
t=-10:0.1:10;

s = (t>=0);

plot(t,s,'LineWidth',2);

title('075bct092');

**Output:**



1. **Code:**

t=-10:0.1:10;

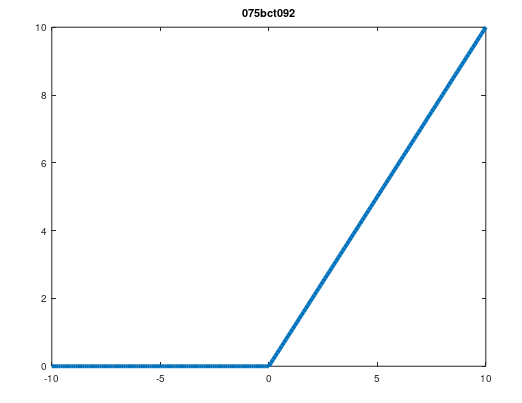
a=1;

s = a\*t.\*(t>=0);

plot(t,s,'LineWidth',2);

title('075bct092');

**Output:**



1. **Code:**

t=-10:0.1:10;

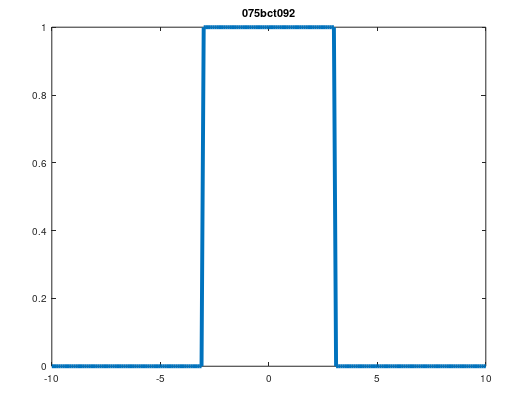
a=3;

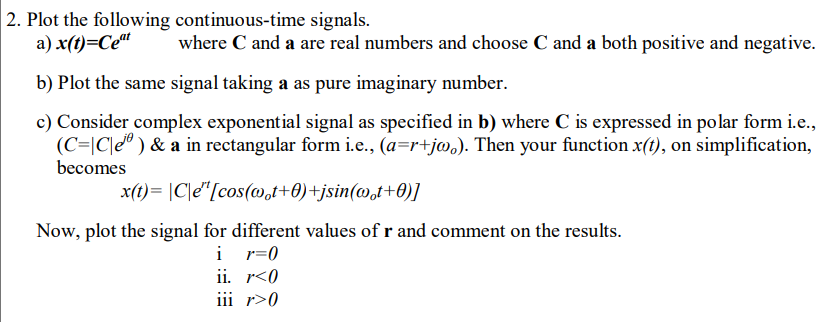
s = (abs(t)<=a);

plot(t,s,'LineWidth',2);

title('075bct092');

**Output:**





1. **Code:**

t = -10:0.1:10;

c = .5;

a = .5;

x = c\*exp(a\*t);

subplot(2,2,1);

plot(t,x,'LineWidth',2);

title('075bct092 - c>0, a>0');

a = -.5;

x = c\*exp(a\*t);

subplot(2,2,2);

plot(t,x,'LineWidth',2);

title('c>0, a<0');

c = -.5;

a = .5;

x = c\*exp(a\*t);

subplot(2,2,3);

plot(t,x,'LineWidth',2);

title('c<0, a>0');

a = -.5;

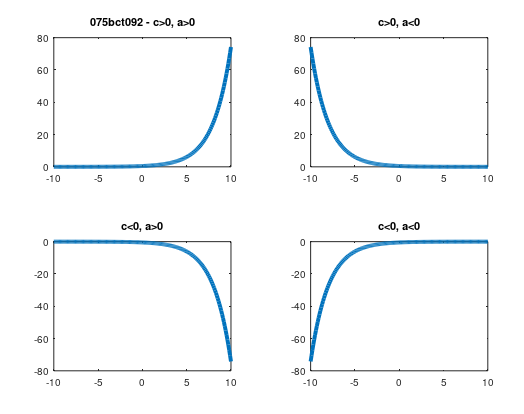
x = c\*exp(a\*t);

subplot(2,2,4);

plot(t,x,'LineWidth',2);

title('c<0, a<0');

**Output:**



1. **Code:**

t = -10:0.1:10;

c = .5;

a = .5i;

x = c\*exp(a\*t);

subplot(2,2,1);

plot(t,x,'LineWidth',2);

title('075bct092 c>0, img(a)>0');

a = -.5i;

x = c\*exp(a\*t);

subplot(2,2,2);

plot(t,x,'LineWidth',2);

title('c>0, img(a)<0');

c = -.5;

a = .5i;

x = c\*exp(a\*t);

subplot(2,2,3);

plot(t,x,'LineWidth',2);

title('c<0, img(a)>0');

a = -.5i;

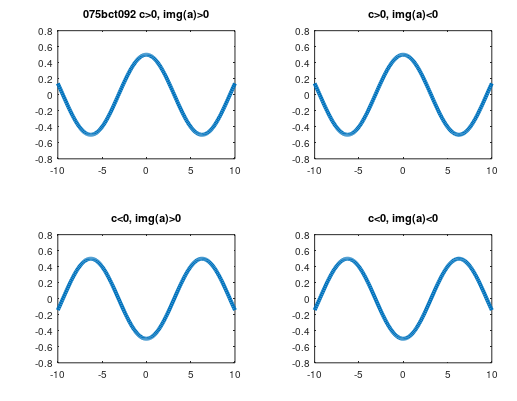
x = c\*exp(a\*t);

subplot(2,2,4);

plot(t,x,'LineWidth',2);

title('c<0, img(a)<0');

**Output:**



1. **Code:**

t = -4:0.1:4;

c = 4;

r = 0;

w0 = 2\*pi/4;

theta = pi/4;

x = abs(c)\*exp(r\*t).\*(cos(w0\*t+theta)+1i\*sin(w0\*t+theta));

subplot(1,3,1);

plot(t,x,'LineWidth',2);

title('075bct092 - r=0');

r = -5;

x = abs(c)\*exp(r\*t).\*(cos(w0\*t+theta)+1i\*sin(w0\*t+theta));

subplot(1,3,2);

plot(t,x,'LineWidth',2);

title('r<0');

r = 5;

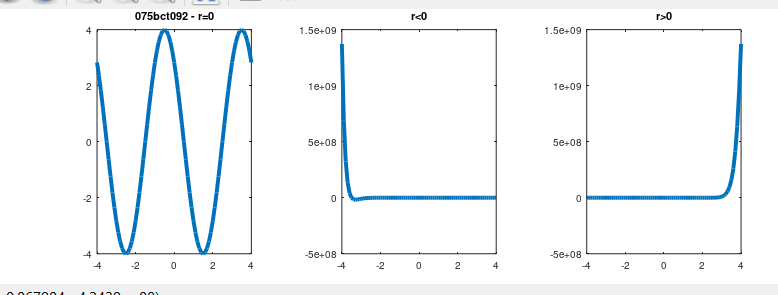
x = abs(c)\*exp(r\*t).\*(cos(w0\*t+theta)+1i\*sin(w0\*t+theta));

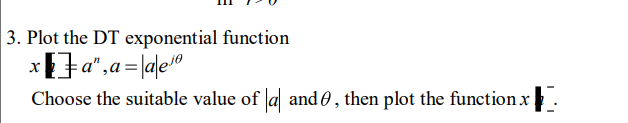
subplot(1,3,3);

plot(t,x,'LineWidth',2);

title('r>0');

**Output:**





Code:

n= -10:10;

a= 3;

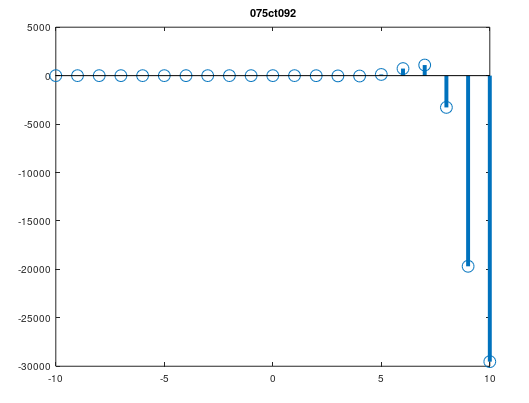
theta = pi/3;

func = power(abs(a)\*exp(i\*theta),n);

stem(n,func,'LineWidth',2);

title('075ct092');

**Output:**





**Code:**

C = [1/3, 1/2, 1/4, 1, 1/4, 1/2, 1/3];

n= -10:0.1:10;

w= 2\*pi/10;

x=zeros(size(n));

for k = -3:3

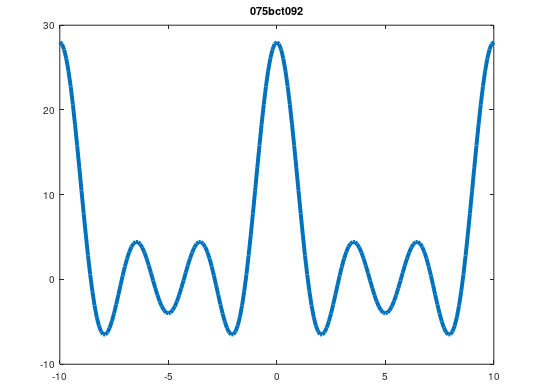
x = x + (k+4)\*exp(i\*k\*w\*n);

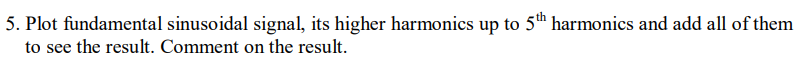
end

plot(n,x,'LineWidth',2);

title('075bct092');

**Output:**





**Code:**

t=-10:0.1:10;

w0=2\*pi/5;

y1=sin(w0\*t);

subplot(3,2,1);

plot(t,y1,'LineWidth',2);

title('075bct092 - y\_1(t)=sin(w0\*t)');

y2=sin(2\*w0\*t);

subplot(3,2,2);

plot(t,y2,'LineWidth',2);

title('y\_2(t)=sin(2\*w0\*t)');

y3=sin(3\*w0\*t);

subplot(3,2,3);

plot(t,y3,'LineWidth',2);

title('y\_3(t)=sin(3\*w0\*t)');

y4=sin(4\*w0\*t);

subplot(3,2,4);

plot(t,y4,'LineWidth',2);

title('y\_4(t)=sin(4\*w0\*t)');

y5=sin(5\*w0\*t);

subplot(3,2,5);

plot(t,y5,'LineWidth',2);

title('y\_5(t)=sin(5\*w0\*t)');

y=y1+y2+y3+y4+y5;

subplot(3,2,6);

plot(t,y,'LineWidth',2);

title('y(t)=y\_1(t)+y\_2(t)+y\_3(t)+y\_4(t)+y\_5(t)');

**Output:**

