19l-1316 lab 12 work:

syms t

x1=heaviside(t+2)-heaviside(t-2);

x2=exp(-t\*2)\*heaviside(t);

x=2\*x1+3\*x2;

X1=fourier(x1);

X2=fourier(x2);

X=fourier(x);

t=[-5:0.01:5];

w=[-2\*pi:0.1:2\*pi];

x1=heaviside(t+2)-heaviside(t-2);

x2=exp(-t\*2).\*heaviside(t);

x=2\*x1+3\*x2;

X1=2./w.\*sin(2\*w);

X2=1./(2+i\*w);

X=4./w.\*sin(2\*w)+3./(2+i\*w);

subplot(311),plot(t,x,'linewidth',2);

subplot(312),plot(w,(2\*X1+3\*X2),'linewidth',2);

subplot(313),plot(w,(X),'linewidth',2);

**12.2:-**

syms t

x1=heaviside(t+2)-heaviside(t-2);

x2=exp(-t\*2)\*heaviside(t);

x=2\*x1+3\*x2;

X1=fourier(x1);

X2=fourier(x2);

X=fourier(x);

t=[-5:0.01:5];

w=[-3.1:0.01:3.1];

x1=heaviside(t+2)-heaviside(t-2);

x2=exp(-t\*2).\*heaviside(t);

x=2\*x1+3\*x2;

X1=2./w.\*sin(2\*w);

X2=1./(2+i\*w);

X=(4./w.\*sin(2\*w))+(3./(2+i\*w));

eq=(2.\*X1)+(3.\*X2);

magXX=abs(eq);

angleXX = angle(eq);

magX=abs(X);

angleX= angle(X);

subplot(221),plot(w,magXX,'linewidth',2);

subplot(222),plot(w,angleXX,'linewidth',2);

subplot(223),plot(w,magX,'linewidth',2);

subplot(224),plot(w,angleX,'linewidth',2)

**12.3:-**

syms t1 t2 t3 w1

w=[-10:0.01:10];

x=heaviside(t1+2)-heaviside(t1-2);

X=fourier(x);

t1=[-10:0.01:10];

x=heaviside(t1+2)-heaviside(t1-2);

X=2./w.\*sin(2\*w);

X=abs(X);

angX= angle(X);

x1=heaviside(t2+1)-heaviside(t2-1);

X1=fourier(x1);

t2=[-10:0.01:10];

x1=heaviside(t2+1)-heaviside(t2-1);

X1=(2.\*sin(w))./w;

X1=abs(X1);

angleX1= angle(X1);

f=1./(2.\*w1).\*sin(4\*w1);

f=ifourier(f);

F=fourier(f);

t3=[-10:0.01:10];

f=heaviside(t3+1) - heaviside(t3-1);

F=(2.\*sin(w))./(w);

F=abs(F);

angleF= angle(F);

subplot(331),plot(t1,x,'linewidth',2);

subplot(332),plot(w,X,'linewidth',2);

subplot(333),plot(w,angX,'linewidth',2);

subplot(334),plot(t2,x1,'linewidth',2);

subplot(335),plot(w,X1,'linewidth',2);

subplot(336),plot(w,angleX1,'linewidth',2);

subplot(337),plot(t3,f,'linewidth',2);

subplot(338),plot(w,F,'linewidth',2);

subplot(339),plot(w,angleF,'linewidth',2);