19L-1316

lab 11 work:

task # 1:

syms t x=exp(-

2\*t)\*heaviside(t);

f=fourier(x); simplify(f); t=[-

10:0.01:10]; w=-3\*pi:0.1:3\*pi;

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

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

subplot(3,1,1),plot(t,x);

subplot(3,1,2),plot(w,abs(f));

subplot(3,1,3),plot(w,angle(f))

;

Task # 2:

syms t

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

f=fourier(x) simplify(f) t=-

10:0.01:10; w=-3\*pi:0.1:3\*pi;

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

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

subplot(3,1,1),plot(t,x)

xlabel(&#39;t -&gt; -10\leqt\leq10&#39;) , ylabel(&#39;y.axis&#39;) ,

title(&#39;fourier transform&#39;);

subplot(3,1,2),plot(w,abs(f))

xlabel(&#39;t -&gt; -10\leqt\leq10&#39;) , ylabel(&#39;y.axis&#39;) ,

title(&#39;amplitude&#39;);

subplot(3,1,3),plot(w,angle(f))

xlabel(&#39;t -&gt; -10\leqt\leq10&#39;) , ylabel(&#39;y.axis&#39;) ,

title(&#39;phase&#39;);