

In the name of allah

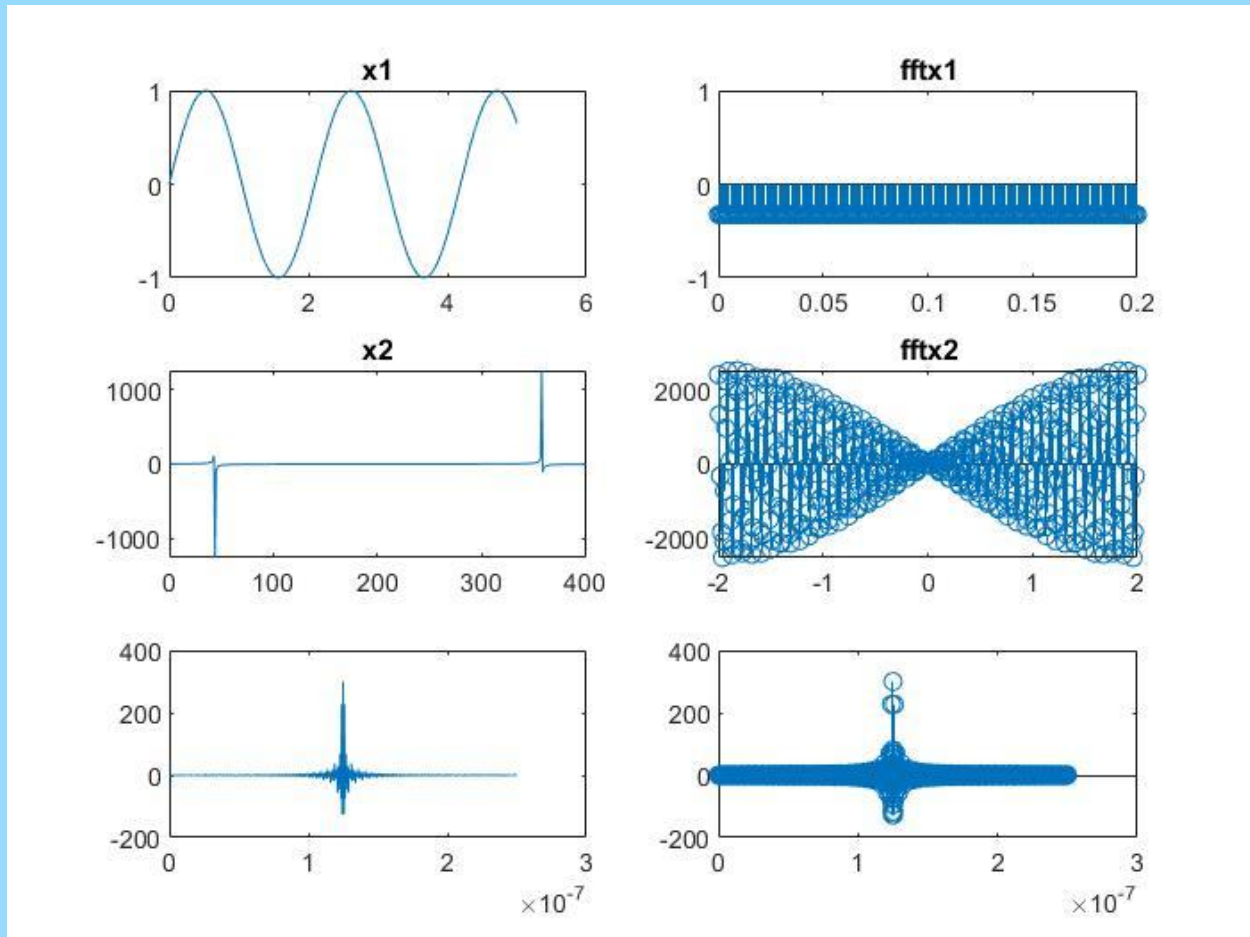
Mohammad erfanzare zardini

98411432

Signal tamrin akhar matlab

Soal1

```
clc
clear
close all
fs = 1000;
t1 = 0:1/fs:5;
x1 = sin(3*t1);
fftx1 = fftshift(fft(x1));
subplot(321)
plot(t1,x1);
title('x1');
subplot(322)
stem(t1,fftx1)
title('fftx1');
axis([0 0.2 -1 1]);
t2= -2:0.01:2;
x2 = tan(t2);
fftx2 = fftshift(fft(x2));
subplot(323)
plot(x2);
title('x2')
subplot(324)
stem(t2,fftx2)
title('fftx2');
fs3 = 100E8;
D = [2.5 10 17.5]' * 1e-8;
t3 = 0 : 1/fs3 : 2500/fs3;
w3 = 1e-8;
x3 = pulstran(t3,D,@rectpuls,w3);
fftx3 = fftshift(fft(x3));
subplot(325)
plot(t3,fftx3);
subplot(326)
stem(t3,fftx3)
```



Soal2

```

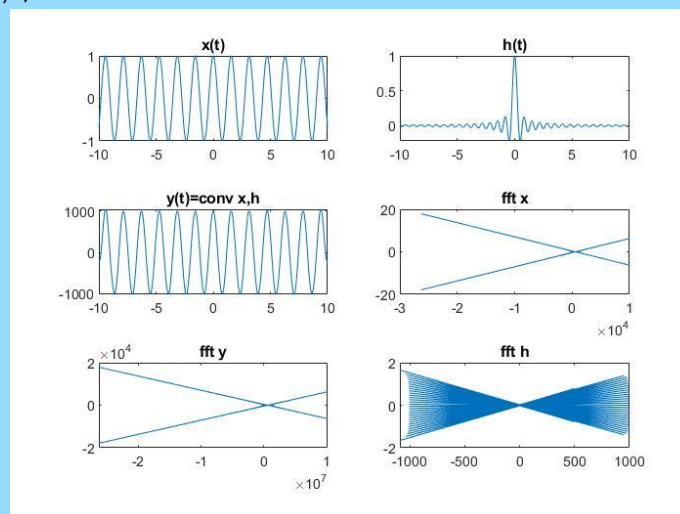
Clc
Clear
Close all
t0=-10;
tf=10;
fs=3000;
ts=1/fs;
t=t0:ts:tf;
x=cos(4*t);
h=sinc(3*t);
y=conv(h,x,'same');
fx=fft(x);
fy=fft(y);
fh=fft(h);
grid on;
subplot(321)

```

```

plot(t,x);
title('x(t)');
subplot(322)
plot(t,h);
title('h(t)');
subplot(323)
plot(t,y);
title('y(t)=conv x,h');
subplot(324)
plot(fx);
title('fft x');
subplot(325)
plot(fy)
title('fft y');
subplot(326)
plot(fh);
title('fft h');

```

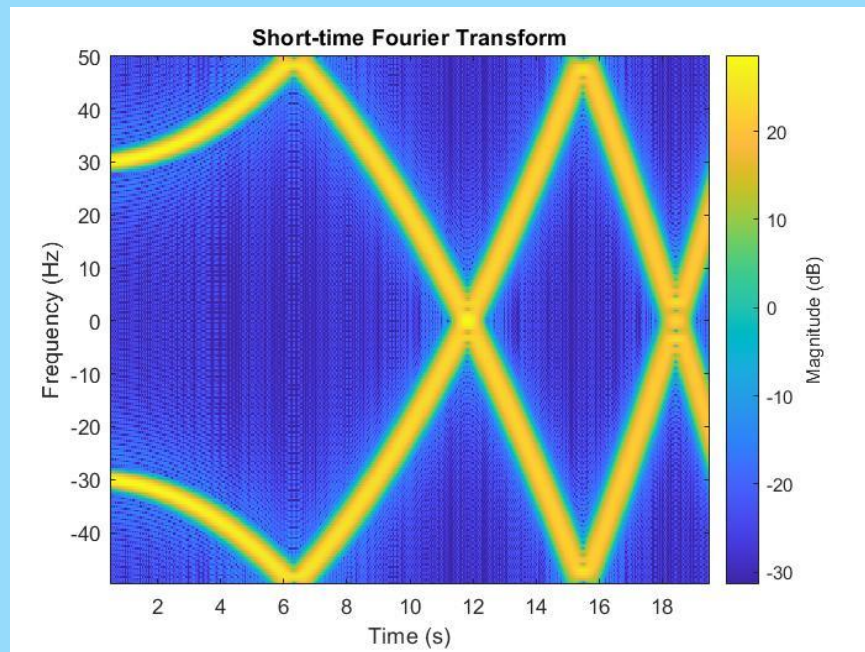


Soal3

```

clc
clear
close all
t0 = 0:1/1e3:2;
f0 = 300;
f1 = 800;
x = chirp(t0,f0,1,f1,'quadratic',[],'concave');
a = seconds(1e-2);
win = hamming(100,'periodic');
stft(x,a,'Window',win,'OverlapLength',98,'FFTLenght',256);

```

Soal4(emptiazi)

The fft2 function for transforms 2-D data into frequency field. The 2-D Fourier transform is use for processing 2-D signals or onother 2-D data such as image.

Syntax of it

$Y = \text{fft2}(x) \Rightarrow \text{fft}(\text{fft}(X), \cdot)'$

$Y = \text{fft2}(x, m, n) \Rightarrow y$ is m-by-n