clc;

clear all;

close all;

Fs=1000; %sampling frequency

Ts=1/Fs; % sampling period or time step

dt=0:Ts:5-Ts; % signal duration

f1=10;

f2=30;

f3=70;

%y=Asin(2pift+theta)

y1=10\*sin(2\*pi\*f1\*dt);

y2=10\*sin(2\*pi\*f2\*dt);

y3=10\*sin(2\*pi\*f3\*dt);

y4=y1+y2+y3;

% subplot(4,1,1)

% plot(dt,y1);

% subplot(4,1,2)

% plot(dt,y2);

% subplot(4,1,3)

% plot(dt,y3);

% subplot(4,1,4)

% plot(dt,y4);

lfft=length(y4); % length of time domain signal

lfft2=2^nextpow2(lfft); % length of signal in power of 2

fftr=fft(y4,lfft2);

subplot(211)

plot(abs(fftr));

fftr2=fftr(1:lfft2/2);

subplot(212)

plot(abs(fftr2));