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Experiment No: 6 Date: 12th Apr 2021

**Fourier Representations**

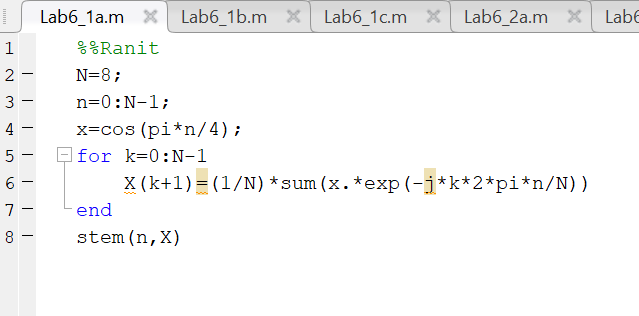
**AIM:**

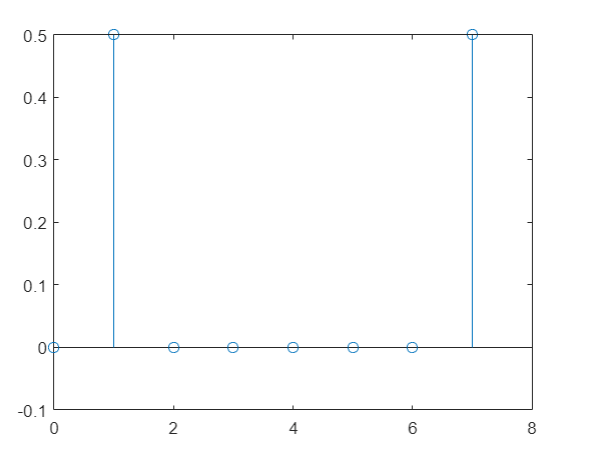
To find the fourier representations of continuous time and discrete time signals

**Lab Exercise:**

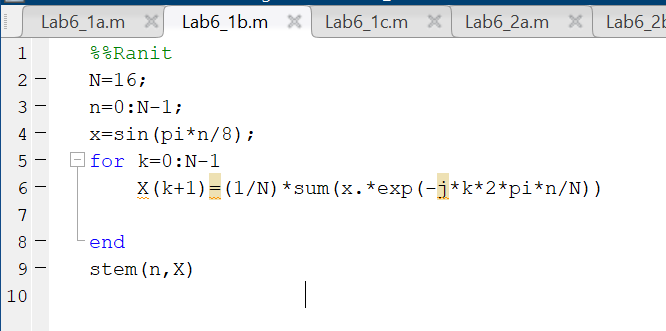
1. Write a matlab program to compute the fourier series coefficients of the given signals.
2. (T=8) b. c. (T=24)

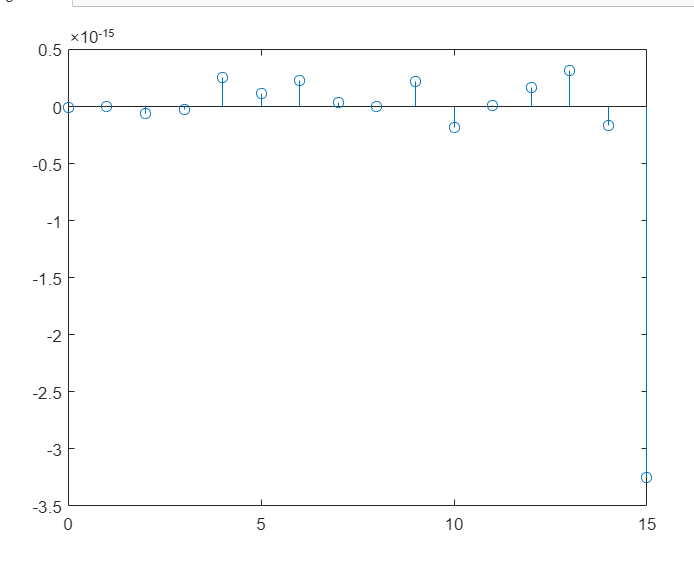
a)



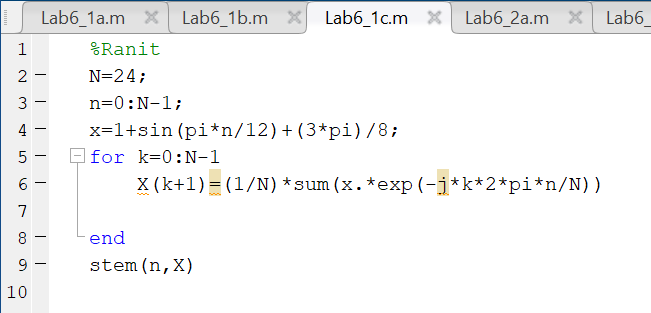


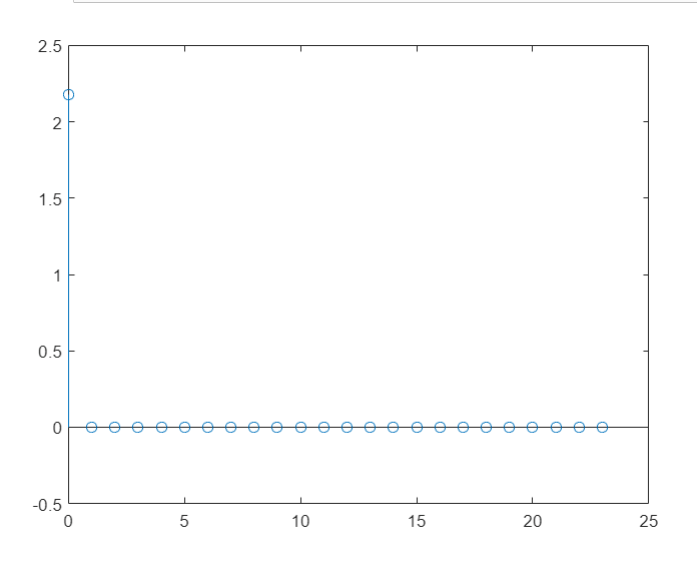
b)





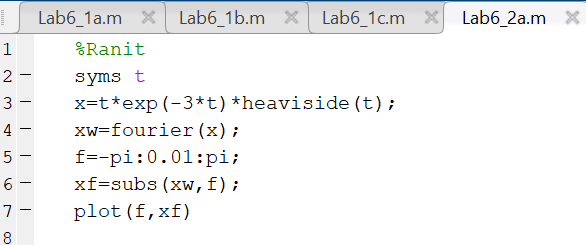
c)

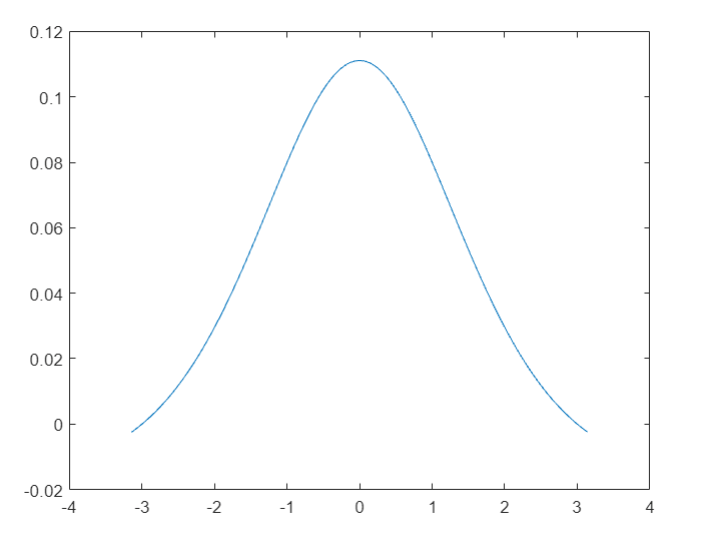




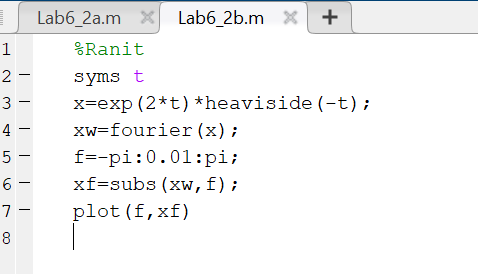
1. Use Matlab to find the fourier transform of the following
2. b.

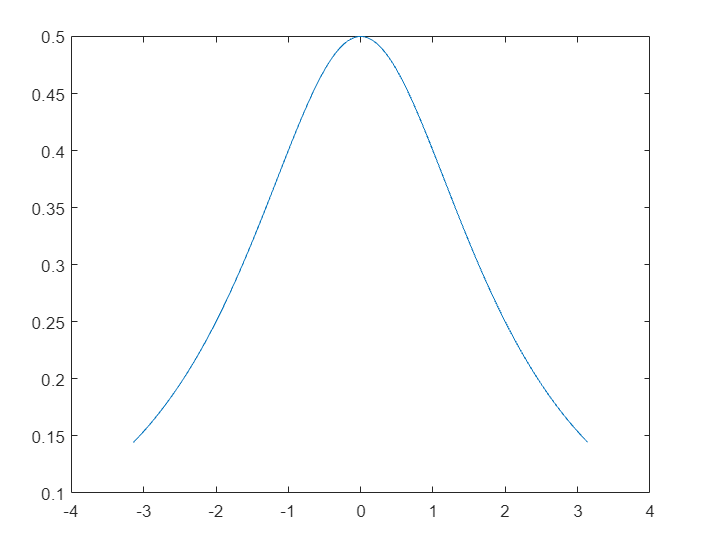
a)



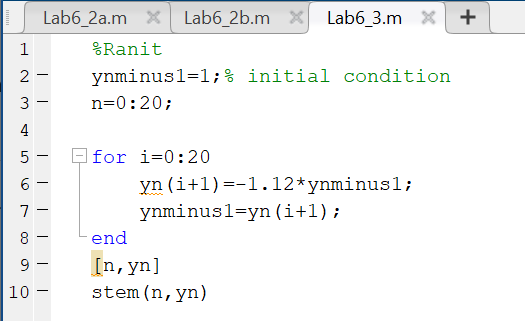


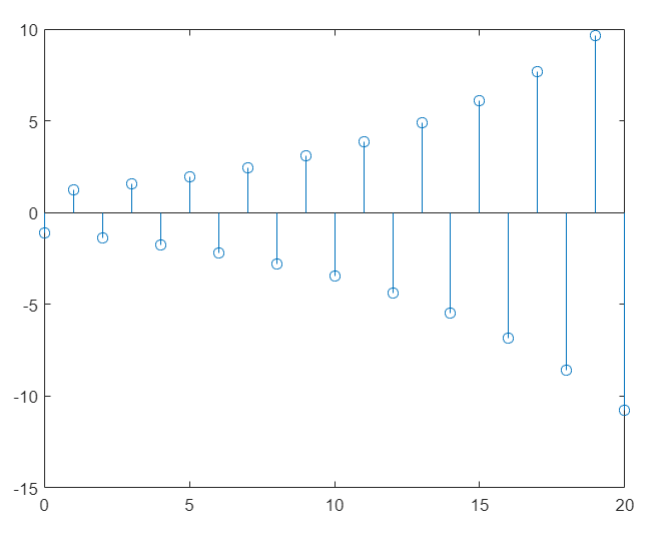
b)



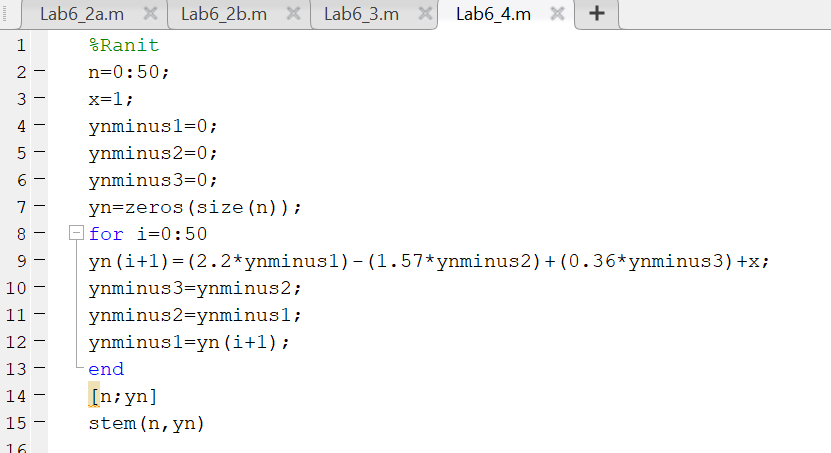


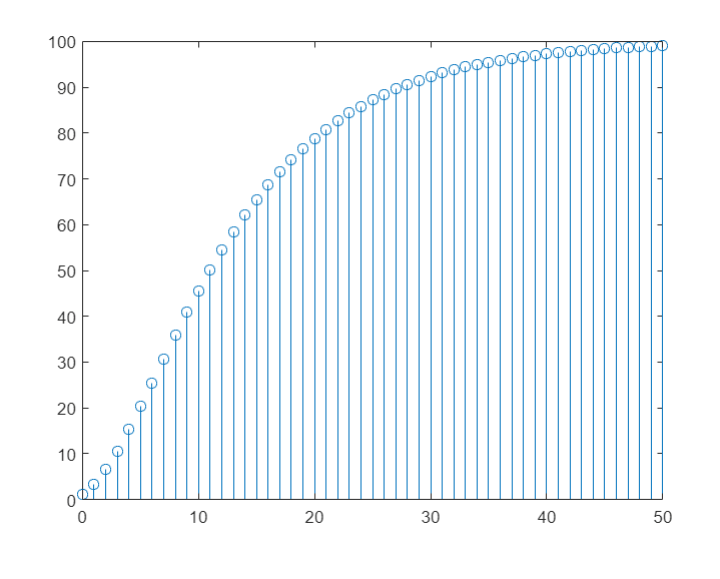
1. Plot the natural response (first 20 points) of the discrete system y(n) + 1.12y(n-1) = 0.1x(n) + 0.2x(n-1) with initial condition y(-1) = 1.





1. Write a MATLAB program to solve the difference equation , Where x[n] = u[n] and y[-1]=y[-2]=y[-3] = 0.





1. Find the frequency response of the MEMS accelerometer system and plot the magnitude response (dB). Given Q=200 and ωn=10,000 rad/s.



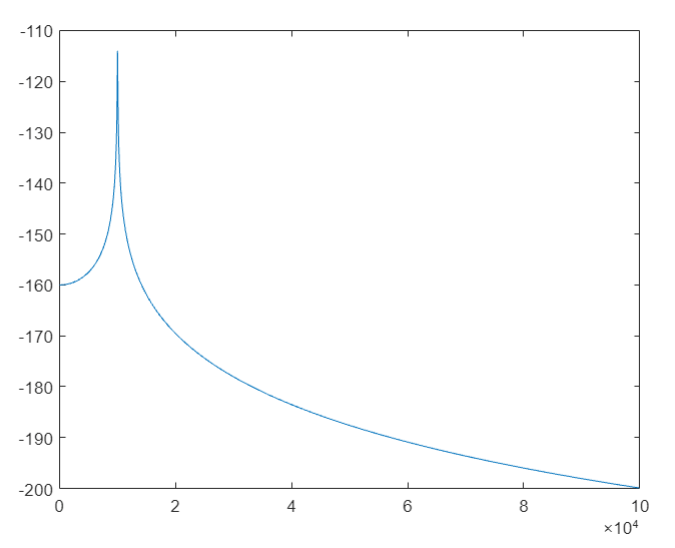
w=1:100:100000;

b=1;

a=[1 50 10000\*10000];

H=freqs(b,a,w);

plot(w,20\*log10(abs(H)));



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