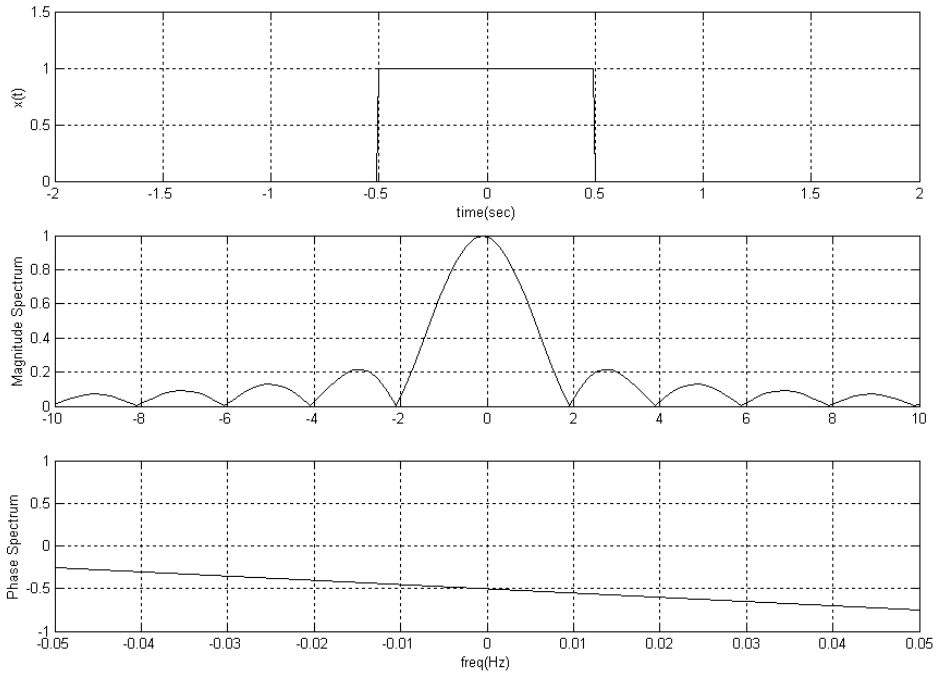
King Fahd University of Petroleum & Minerals
Department of Electrical Engineering
EE-207
Signals & Systems

Project Assignment No. 3
Due Date: 2 December 2003

Problem No.1

Using MATLAB, write an M-file to perform the following:

1. Consider the following figure:



You will regenerate the above figure. So firstly implement x(t). Then find its Fourier Transform, X(f), using *fftshift(fft(x))* in MATLAB. Generate a figure of a 3-panel type. Plot in the first panel the input x(t). In the second panel, plot the magnitude spectrum of X(f) (use *abs(X)*). Finally, plot the phase spectrum of X(f) by simply using *angle(X).*

Note: Use the step size to be 0.01. Also, when you plot the spectrums, you need to scale the x-axis using the following MATLAB statement:

*f=[-length(X)/2:(length(X)/2)-1]*200/length(X);*

In other word, use for example: *plot(f,abs(X))* for the magnitude spectrum.

MATLAB functions you may need: *zeros, plot, subplot, fft, fftshift, abs, angle, xlabel, ylabel, title, axis*
