

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

Project Assignment No. 1
Due Date: 19 October 2003

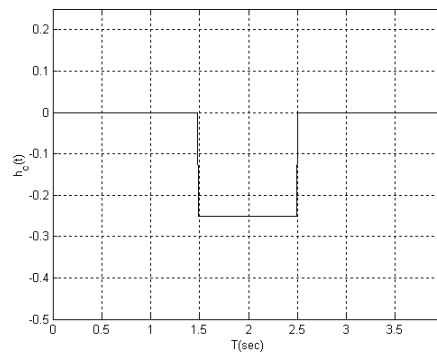
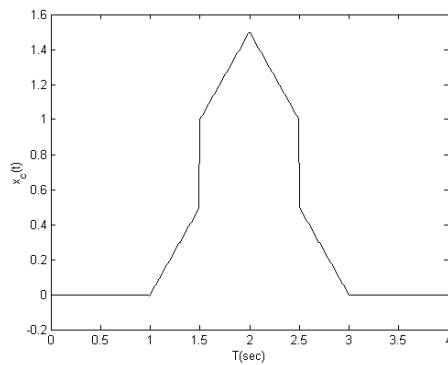
Using MATLAB, write an M-file perform the following problems;

Problem No.1

1. write MATLAB function to generate the following functions:
 - a. unit step
 - b. unit ramp
 - c. impulse function (delta should be variable)

Hint: impulse response may be obtained from unit step

2. Implement the functions $x_a(t)$ and $h_a(t)$, respectively, based on the following figures



Generate a figure of a 2-panel type. Plot in the first panel the input $x_a(t)$ and $h_a(t)$ together while in the second panel, plot the result (call it $y_a(t)$) of convolving $x_a(t)$ with $h_a(t)$.

MATLAB functions you may need: *sign, zeros, plot, subplot, conv, stem, linspace, xlabel, ylabel, title*

Problem No. 2

Using MATLAB, write an M-file to display the following as it is given:

$Z = X + jY$	Magnitude	Phase(rad)	Phase(deg)	
1.0000 1.0000	1.4142	0.7854	45.0000	
2.0000 3.0000	3.6056	0.9828	56.3099	
-2.0000 2.0000	2.8284	2.3562	135.0000	
$Z =$	Magnitude	Phase(deg)	Phase(rad)	$X + jY$
4	45	?	?	?
$\sqrt{2}$	30	?	?	?

You need to give MATLAB the complex numbers, and then let it compute the real, imaginary, magnitude, and phase in both radian & degrees of the given complex numbers.

MATLAB functions you may need: *abs, angle, real, imag, disp, pi*
