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%                               Proakis & Salehi                               <Your Name>
% EGR 363                               PS# 1                               Page 1 of ___ Date 1/18/2023
%
% 2.1.0 Plot the following signal
%  $x_0(t) = \text{rect}((t - 1.875)/0.25) + u(t - 2)\cos(2\pi t)$ 
%
% Note: The code below calls m-files named "rect.m" and "u.m" but "cos" is built in.
t_start = -1;
t_stop = 10;
t_step = 0.001;
x_min = -1.2;
x_max = 1.2;

eps = 0.0001; % A small number used to prevent overlap at one sample point.
t = [t_start : t_step : t_stop];
x0 = rect((t - 1.875)/0.25) + u(t - 2 - eps).*cos(2*pi*t); % .* is element-by-element mult.
% whereas * is matrix multiplication
% 'k' plots with a black line

plot (t, x0, 'k');
xlabel('t, (sec)');
ylabel('x0(t), (volts)');
title('x0(t) vs. t');
axis([t_start, t_stop, x_min, x_max]);

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