EE 204 Signals and Systems Laboratory 1

I. Experimental Work

1) A cont. time $x(t)$ signal is given. Plot $x(t)$ versus $t = 0 : 0.01 : 5$. $x(t) = 10e^{-t} - 5e^{-0.5t}$

2) Repeat part (1) for $x(t) = 10e^{-t} + 5e^{-0.5t}$
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3) An exponentially damped sinusoidal signal is defined by $x(t) = 20sin(2\pi \times 1000t - \pi/3)(e^{-at})$ where the exponential parameter a is variable, taking on the set of values a=250, 500, 750, 1000. For each a value draw $x(t)$ signal for $-2 \leq t \leq 2$ miliseconds. Observe the effects of a on the signal. Using subplot command plot $x(t)$ signals for all a values on the same graph.
4) A rectangular pulse is defined by

$$x(t) = \begin{cases} 10 & \text{if } 1 \leq t \leq 10 \\ 0 & \text{Otherwise} \end{cases}$$

Write an matlab file to generate $x(t)$ signal.

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