Problem 8.1: Perform the convolution $y(t) = x(t) * g(t)$, where $x(t) = u(t)$ and $g(t) = e^{-2t}u(t)$. Plot $y(t)$ with a straightedge and label all axes and important features. Show the origin for context.

Problem 8.2: Perform the convolution $y(t) = x(t) * g(t)$, where $x(t) = e^{t}u(-t)$ and $g(t) = u(t-2)$. Plot $y(t)$ with a straightedge and label all axes and important features. Show the origin for context.

Problem 8.3: Shown in Figure 1 is the input $x(t)$ to an LTI system with impulse response $h(t) = u(t-1) - u(t+1)$. Plot the output of the system. Use a straightedge and label all axes and all important features. Show the origin for context.

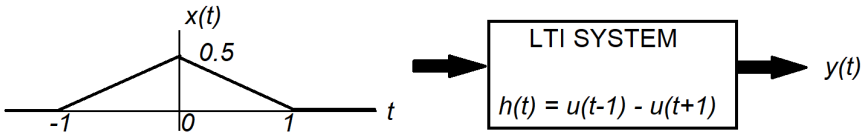

Figure 1

Optional, but testable, problems: From the textbook, Problems 2.11, 2.22.