

ECE 312 HW #4 (Due by noon on July 25)

1. (5 points) The response of a continuous-time LTI system to the input $x(t) = e^{-2t}u(t)$ is $y(t) = e^{-t}u(t) - e^{-3t}u(t)$. Find the frequency response $H(\omega)$ and the impulse response $h(t)$ for this system.
2. (3 points) Find the inverse CTFT for $X_1(\omega) = \pi e^{-2|\omega|}$
3. (2 points) Find the CTFT for $x(t) = e^{-a(t-1)}u(t-1)$ where $a > 0$.