

ECE 312 HW #6

This assignment is due Monday, August 6th by noon.

1. Let a LTI system have the impulse response $h[n] = (-0.7)^n \cdot (u[n] - u[n - 3])$.
 - (a) (2 points) Is this system causal? (Justify your answer)
 - (b) (2 points) Find the response of this system to the input signal $x[n] = \text{rect}_2(n - 2)$ for $n = 0, 1, 2, \dots, 20$
 - (c) (2 points) Find $H(z)$
2. Let a LTI system be described by $y[n] = x[n] - 2x[n - 1]$.
 - (a) (1 point) find $h[n]$
 - (b) (1 point) find $H(\theta)$
3. (2 points) Suppose $x[0] = 1$, $x[1] = -2$, $x[3] = 0$ and $x[4] = 1/2$. Find $X(\theta)$