

EECS 360
Spring 2013
Quiz 2

Name _____

Student ID # _____

- 1) Find the system output $y(t)$ given an input $x(t)$ and a system with an impulse response of $h(t)$ where:

$$x(t) = \delta(t-1)$$

$$h(t) = u(t)e^{-\frac{t}{2}}$$

$$y(t) = \delta(t-1) * u(t)e^{-\frac{t}{2}}$$

$$= u(t-1)e^{-\frac{(t-1)}{2}}$$

Ave 7.8
SD 1.8

10	8
9	3
8	6
7	0
6	10
5	2

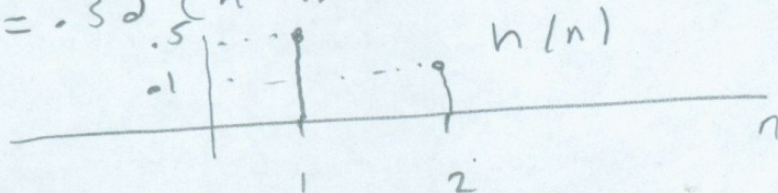
2. A system is defined by: $y(n) = 0.5x(n-1) + 0.1x(n-2)$

- a) Find the system's impulse response.

Let $x(n) = \delta(n)$ then

$$y(n) = 0.5\delta(n-1) + 0.1\delta(n-2)$$

so $h(n) = 0.5\delta(n-1) + 0.1\delta(n-2)$



- b) Is this a causal system? Justify

The system is causal.

$$h(n) = 0 \quad n < 0$$