EECS20n, Quiz 4, 10/14/04

The quiz will take 15 minutes. Write your reponse on the sheet.

Print your name and lab time here:

Last Name _____ First ____ Lab time ____

1. **5 points** Consider the difference equation

$$y(n) = 0.5x(n-2) + x(n-1) + x(n).$$
(1)

- a. What state would you choose to obtain an $[A, b, c^T, d]$ representation for this system?
- b. What is the $[A,b,c^T,d]$ representation for your choice of the state?

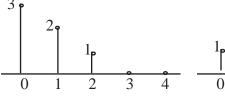
$$A =$$

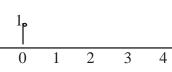
$$, b =$$

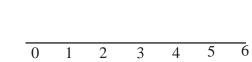
$$c^T =$$

$$d =$$

- c. What is the zero-state impulse response h of the system (1)?
- 2. **5 points** Plot y = h * x for signals h, x shown below. Carefully mark the values of y.







y = h *x

