

Name: _____

EE432 Fall 2011 Quiz 5

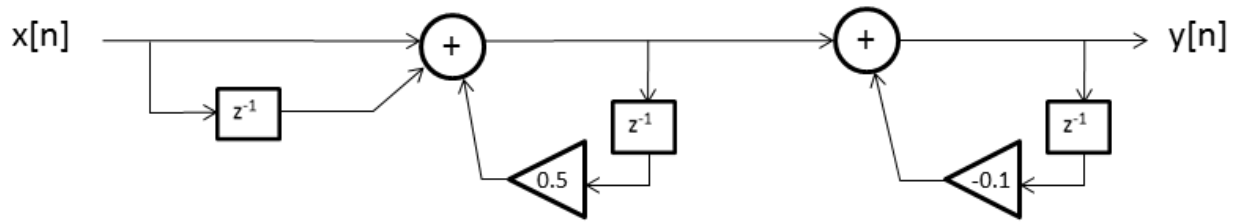
Work problem 1 OR 2 (not both), and problems 3 AND 4.

1. Find the transfer function for the system characterized by the difference equation:
 $y[n] = x[n] - 0.1x[n - 1] + 0.3x[n - 2] + 0.25y[n - 1] + y[n - 3].$

2. Find the difference equation associated with the following transfer function:

$$H(z) = \frac{0.9z^2 + 1}{z^2 - 0.2z + 1}$$

3. Find the transfer function associated with the following block diagram.



4. Use your ZT tables to find the ZT of the following. Include the ROC.

(a) $\delta[n] + (-0.25)^n u[n]$

(a) $(n - 2)(0.5)^{n-2} u[n - 2]$.

Bonus: What Japanese Admiral was killed when his transport plane was shot down in *Operation Vengeance* in 1943? Hint: This operation was a direct result of *Magic* communication intercepts.