EE 123 DIGITAL SIGNAL PROCESSING, Spring 2009
Homework # 2, Due February 5, Thursday

1. Problem 3.24, Oppenheim and Schafer, 2nd ed.
2. Problem 3.28, Oppenheim and Schafer, 2nd ed.
3. Problem 3.33, Oppenheim and Schafer, 2nd ed.
4. Calculate the inverse z-transform of

$$X(z) = \frac{0.1}{(z-1)(z-0.9)}$$

   using: a) the partial fraction expansion, b) the residue formula.

5. Suppose $x[n]$ is a sequence such that $x[n] = 0$ for $n < 0$ and let $X(z)$ denote its z-transform. Find an expression for the z-transform of the following sequences:

   a) $x[n+1]u[n]$

   b) $x[n+2]u[n]$

   c) $x[n-1]u[n-2]$.