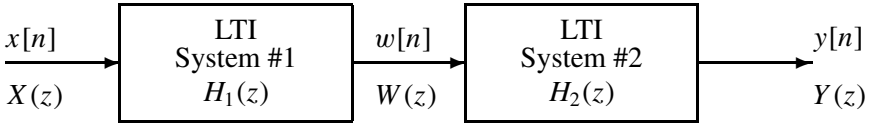
PROBLEM:

Consider the following cascade system:



The system function for the first system is

$$H_1(z) = \frac{(1 - 1.2z^{-1})}{(1 - 0.8e^{j\pi/4}z^{-1})(1 - 0.8e^{-j\pi/4}z^{-1})}$$

(a) We wish to find a System #2 such that $y[n] = x[n]$ for any input. How should $H_2(z)$ be chosen?

(b) Determine the difference equation that would be satisfied by the input $w[n]$ and the output $y[n]$ of the second system.

(c) Would there be any problem in implementing the system found above? Explain.