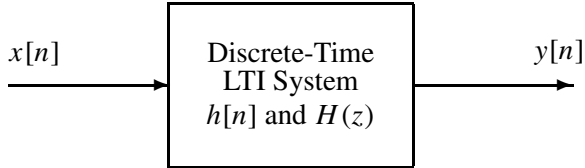


PROBLEM:



An LTI discrete-time system is depicted above. The system function of the system is

$$H(z) = \frac{1}{(1 - 0.4z^{-1})(1 + 0.8z^{-1})}.$$

- It is desired that the *output* of the system be $y[n] = (0.4)^n u[n]$. Find the z -transform $Y(z)$ of this output signal.
- Use the z -transform method to determine the z -transform $X(z)$ of the input to the system such that the output of the system will be $y[n] = (0.4)^n u[n]$.
- Use the partial fraction expansion method to determine the impulse response $h[n]$ of the system with system function $H(z)$ given above.