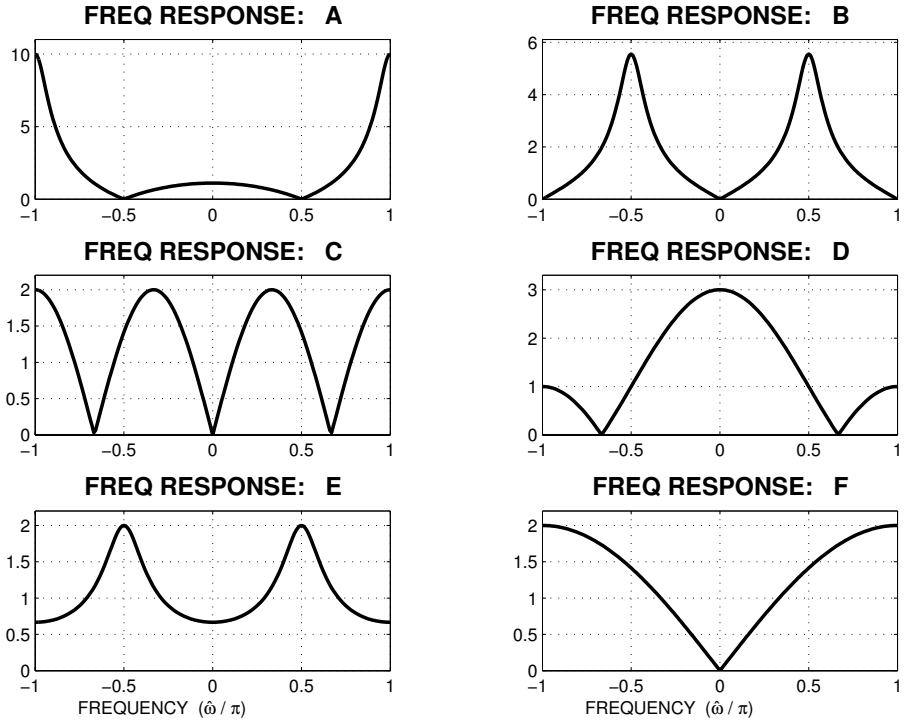
PROBLEM:



For each of the frequency response plots (A, B, C, D, E, F), determine which one of the following systems (specified by either an $H(z)$ or a difference equation) matches the frequency response (magnitude only). NOTE: the frequency axis is **normalized**; it is $\hat{\omega}/\pi$.

$\mathcal{S}_1$: $y[n] = x[n] - x[n-1]$

$\mathcal{S}_2$: $y[n] = -0.8y[n-1] + x[n] + x[n-2]$

$\mathcal{S}_3$: $y[n] = -0.5y[n-2] + x[n-1]$

$\mathcal{S}_4$: $y[n] = 0.8y[n-1] + 0.5x[n]$

$\mathcal{S}_5$: $H(z) = \dfrac{1 - z^{-2}}{1 + 0.64z^{-2}}$

$\mathcal{S}_6$: $H(z) = 1 + z^{-1} + z^{-2}$

$\mathcal{S}_7$: $H(z) = \dfrac{1 + z^{-1}}{1 - 0.9z^{-1}}$

$\mathcal{S}_8$: $H(z) = z^{-1} - z^{-4}$

Mark your answers in the following table:

FREQUENCY RESPONSE	SYSTEM ($\mathcal{S}_\#$)	FREQUENCY RESPONSE	SYSTEM ($\mathcal{S}_\#$)
A		B	
C		D	
E		F	