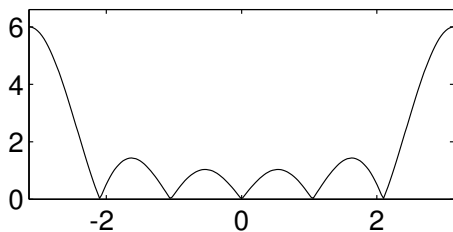
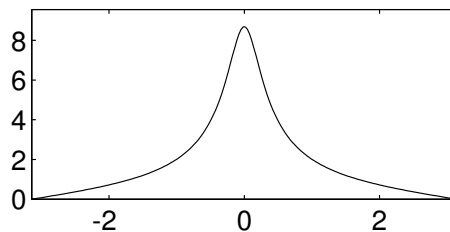


PROBLEM:

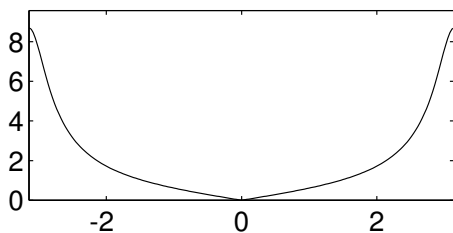
FREQ RESPONSE: A



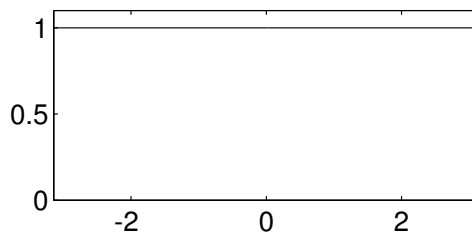
FREQ RESPONSE: B



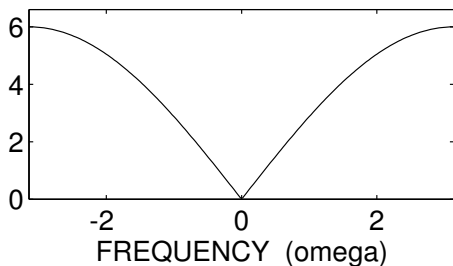
FREQ RESPONSE: C



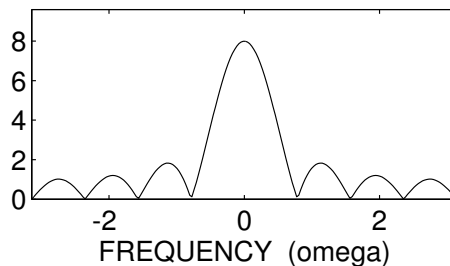
FREQ RESPONSE: D



FREQ RESPONSE: E



FREQ RESPONSE: F



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.

NOTE: the frequency axis for each plot extends over the range $-\pi \leq \hat{\omega} \leq \pi$.

$$\mathcal{S}_1 : \quad y[n] = 0.77y[n-1] + x[n] + x[n-1]$$

$$\mathcal{S}_2 : \quad y[n] = 0.77y[n-1] + 0.77x[n] - x[n-1]$$

$$\mathcal{S}_3 : \quad H(z) = \frac{1 - z^{-1}}{1 + 0.77z^{-1}}$$

$$\mathcal{S}_4 : \quad H(z) = 1 - z^{-1} + z^{-2} - z^{-3} + z^{-4} - z^{-5}$$

$$\mathcal{S}_5 : \quad y[n] = \sum_{k=0}^7 x[n-k]$$

$$\mathcal{S}_6 : \quad H(z) = 3 - 3z^{-1}$$

$$\mathcal{S}_7 : \quad y[n] = x[n] + x[n-1] + x[n-2] + x[n-3] + x[n-4] + x[n-5]$$