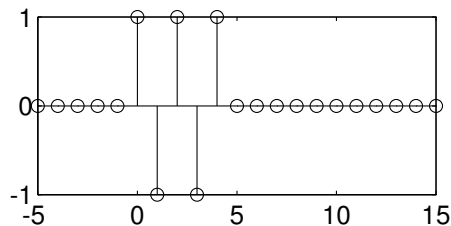
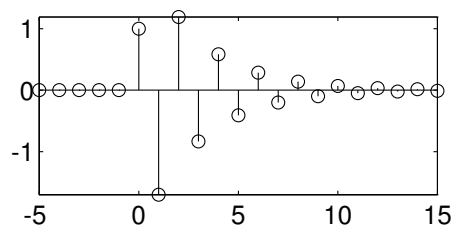


PROBLEM:

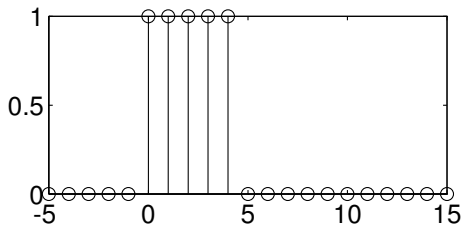
IMPULSE RESPONSE: J



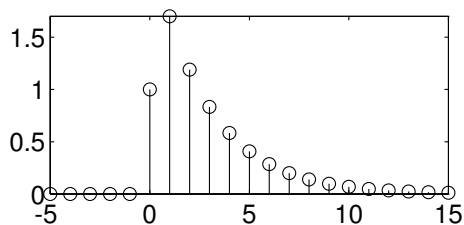
IMPULSE RESPONSE: K



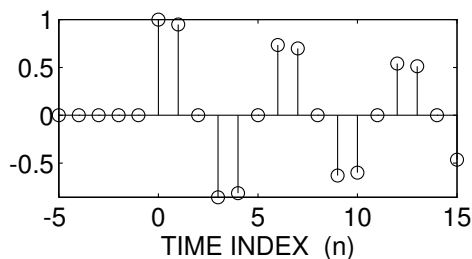
IMPULSE RESPONSE: L



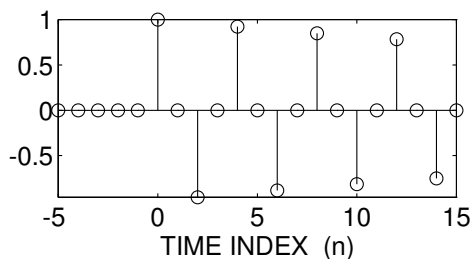
IMPULSE RESPONSE: M



IMPULSE RESPONSE: N



IMPULSE RESPONSE: O



For each of the impulse-response plots (J, K, L, M, N, O), determine which one of the following systems (specified by either an $H(z)$ or a difference equation) matches the impulse response.

$$\mathcal{S}_1 : y[n] = \sum_{k=0}^4 x[n-k]$$

$$\mathcal{S}_2 : y[n] = x[n] + x[n-5]$$

$$\mathcal{S}_3 : H(z) = 1 - z^{-1} + z^{-2} - z^{-3} + z^{-4}$$

$$\mathcal{S}_4 : y[n] = -0.96y[n-2] + x[n]$$

$$\mathcal{S}_5 : y[n] = 0.7y[n-1] + x[n] + x[n-1]$$

$$\mathcal{S}_6 : H(z) = \frac{1 - z^{-1}}{1 + 0.7z^{-1}}$$

$$\mathcal{S}_7 : y[n] = -0.95y[n-1] - 0.9025y[n-2] + x[n] + x[n-2]$$

$$\mathcal{S}_8 : y[n] = -0.95y[n-1] - 0.9025y[n-2] + x[n]$$

$$\mathcal{S}_9 : H(z) = \frac{1 + z^{-2}}{1 - 0.95z^{-1} + 0.9025z^{-2}}$$