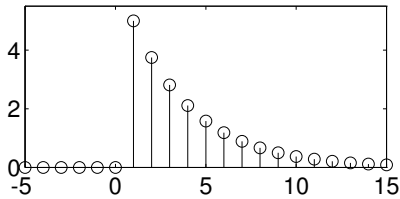
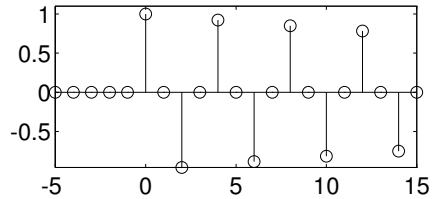


PROBLEM:

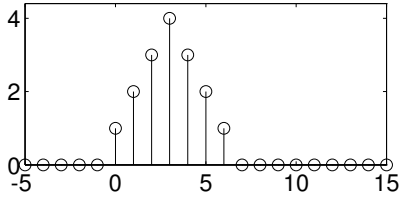
IMPULSE RESPONSE: J



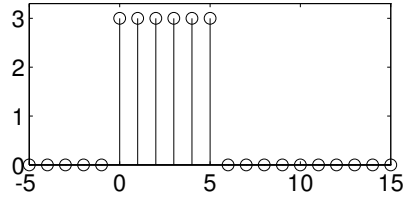
IMPULSE RESPONSE: K



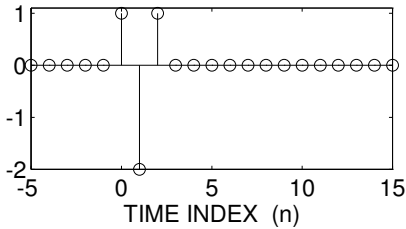
IMPULSE RESPONSE: L



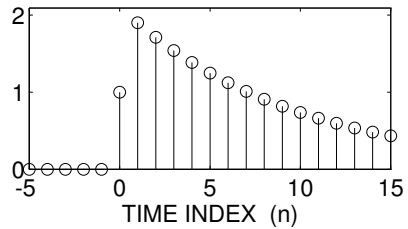
IMPULSE RESPONSE: M



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.

$$\mathcal{S}_0: y[n] = -0.96y[n-2] + x[n]$$

$$\mathcal{S}_1: y[n] = 0.75y[n-1] + 5x[n-1]$$

$$\mathcal{S}_2: y[n] = 0.75y[n-1] + 0.75x[n] - x[n-1]$$

$$\mathcal{S}_3: H(z) = \frac{1 + z^{-1}}{1 - 0.9z^{-1}}$$

$$\mathcal{S}_4: H(z) = (1 - z^{-1})^2$$

$$\mathcal{S}_5: H(z) = 3(1 + z^{-1} + z^{-2} + z^{-3} + z^{-4} + z^{-5})$$

$$\mathcal{S}_6: y[n] = 2x[n] - 2x[n-1]$$

$$\mathcal{S}_7: y[n] = 2 \sum_{k=0}^8 x[n-k]$$

$$\mathcal{S}_8: y[n] = x[n] + 2x[n-1] + 3x[n-2] + 4x[n-3] + 3x[n-4] + 2x[n-5] + x[n-6]$$

$$\mathcal{S}_9: H(z) = \frac{1 + \sqrt{2}z^{-1} + z^{-2}}{1 - 1.3152z^{-1} + 0.8649z^{-2}}$$