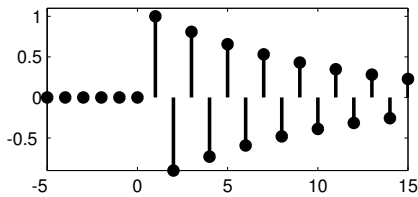
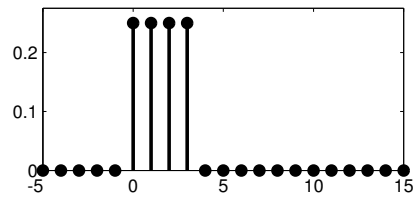
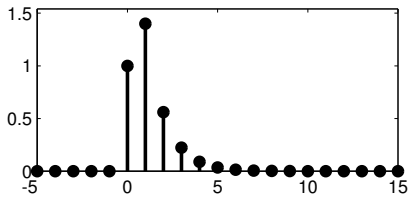
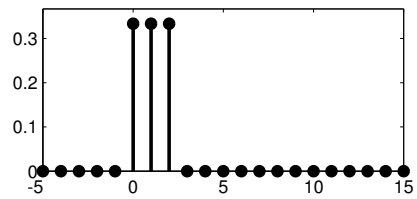
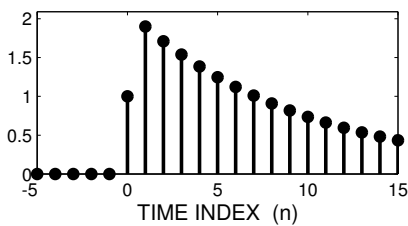
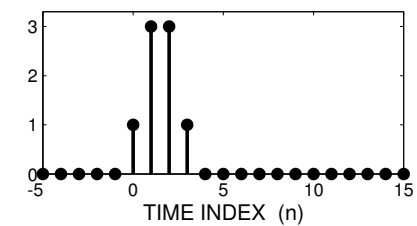


PROBLEM:**IMPULSE RESPONSE: J****IMPULSE RESPONSE: K****IMPULSE RESPONSE: L****IMPULSE RESPONSE: M****IMPULSE RESPONSE: N****IMPULSE RESPONSE: O**

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.

J: **K:** **L:** **M:** **N:** **O:**

$$\mathcal{S}_0 : \quad y[n] = 0.9y[n-1] + x[n] + x[n-1]$$

$$\mathcal{S}_1 : \quad y[n] = 0.4y[n-1] + x[n] + x[n-1]$$

$$\mathcal{S}_2 : \quad H(z) = \frac{z^{-1}}{1 + 0.9z^{-1}}$$

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

$$\mathcal{S}_4 : \quad y[n] = \frac{1}{4}x[n] + \frac{1}{4}x[n-1] + \frac{1}{4}x[n-2] + \frac{1}{4}x[n-3]$$

$$\mathcal{S}_5 : \quad y[n] = \frac{1}{5} \sum_{k=0}^4 x[n-k]$$

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