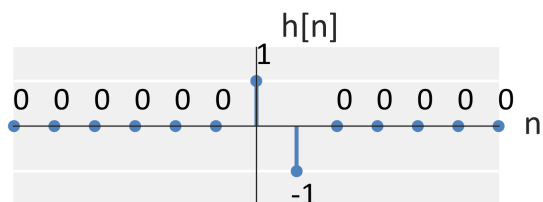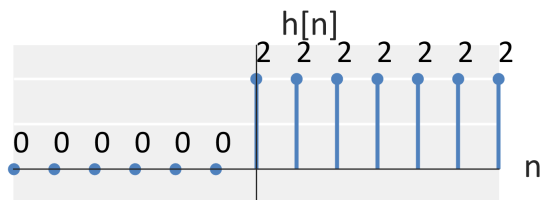**Question #1:**   For each impulse response corresponding to an LTI system below, determine if the system is causal (or anti-causal or acausal), memoryless, and BIBO stable.
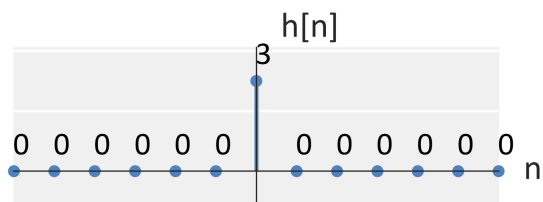
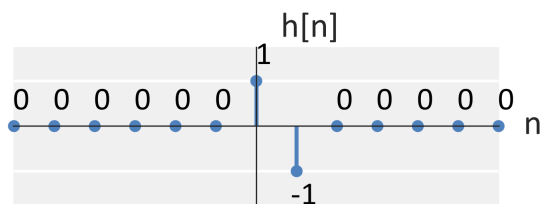(a) $h[n] = \delta[n] - \delta[n-1]$
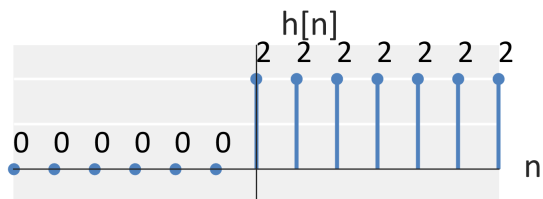

(b) $h[n] = 2u[n]$

(c) $h[n] = 3\delta[n]$

Question #2: For each impulse response corresponding to an LTI system below, determine the corresponding difference equation.

(a) $h[n] = \delta[n] - \delta[n-1]$

h[n]

$$\begin{array}{c}1\\ 0 \quad 0 \quad 0 \quad 0 \quad 0 \quad 0 \qquad\qquad 0 \quad 0 \quad 0 \quad 0 \quad 0\\ \text{n}\\ -1\end{array}$$

(b) $h[n] = 2u[n]$

h[n]

$$\begin{array}{c}2 \quad 2 \quad 2 \quad 2 \quad 2 \quad 2 \quad 2\\ 0 \quad 0 \quad 0 \quad 0 \quad 0 \quad 0\\ \text{n}\end{array}$$

(c) $h[n] = 3\delta[n]$

h[n]

$$\begin{array}{c}3\\ 0 \quad 0 \quad 0 \quad 0 \quad 0 \quad 0 \qquad 0 \quad 0 \quad 0 \quad 0 \quad 0 \quad 0\\ \text{n}\end{array}$$