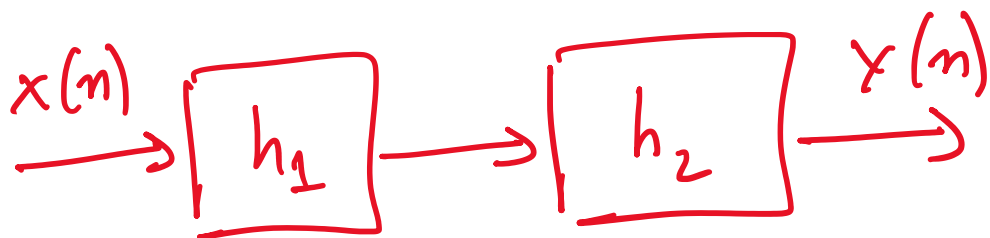


ES2



$$x(n) = \delta(n) - a\delta(n-1)$$

$$h_1(n) = \sin(\delta n) \text{ NON BIBO STABLE } \sum_n |\sin(\delta n)| = \infty$$

$$h_2(n) = a^n 1_0(n) \quad |a| < 1$$

BIBO STABLE

1) BIBO stable? **NON BIBO STABLE**

2) $y(n) = ?$

XQSA PRIVATE A CIRCOLARE
 $h(n) = h_1 * h_2(n)$

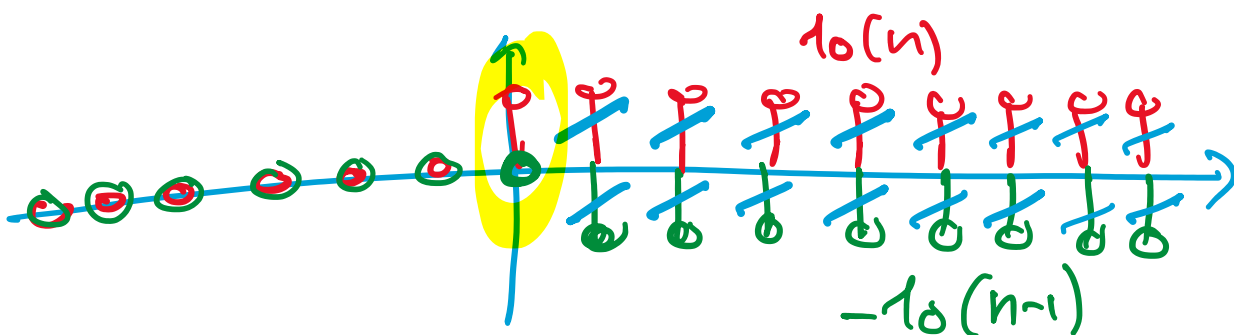
$$y(n) = x * h_1 * h_2(n) = (x * h_2) * h_1(n)$$

$$x * h_2(n) = h_2(n) - a h_2(n-1)$$

$$= a^n 1_0(n) - \underbrace{a \cdot a^{n-1}}_{a^n} 1_0(n-1)$$

$$= a^n \cdot (1_0(n) - 1_0(n-1)) = a^n \delta(n)$$

$$= \delta(n)$$



$$y(n) = \delta * h_1(n) = h_1(n) = \sin(\delta n)$$