

Fall 2017 Midterm 1

$$y[n] = (n+10)x[-n^4]$$

$$y_1[n] = (n+10)x_1[-n^4]$$

$$y_2[n] = (n+10)x_2[-n^4]$$

$$x_3[n] = x_1[n] + x_2[n]$$

$$y_3[n] = (n+10)x_3[-n^4]$$

$$= (n+10)(x_1[-n^4] + x_2[-n^4])$$

$$= y_1[n] + y_2[n]$$

Additive

Also, Homogeneous

∴
Linear

(2)

$y[n] = x[-n^4]$ Causal

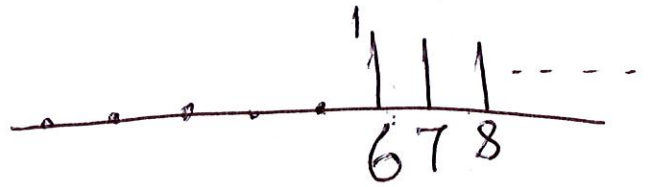
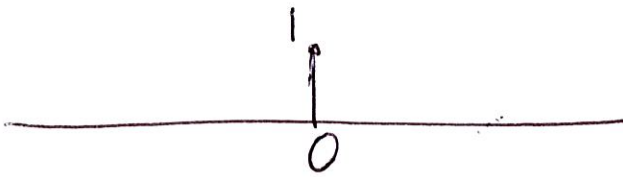
$y[n] = x[(-n)^4]$ Non-causal

FIR FS

LTI

$\delta[n]$

$h[n]$



Output obtained by accumulating input from $n-b$ to $-\infty$

$h[n+b]$

$h[n+5] = \delta[n]$

