

$$y[n] = x^2[n]$$

$$x_1[n] = 2 \cdot x[n]$$

$$\rightarrow y_1[n] = x_1^2[n] = 4x^2[n]$$

$\rightarrow j = \rightarrow$ not linear

$$2 \cdot y[n] = 2 \cdot x^2[n]$$

Time-Invariant:

$$x_2[n] = x[n-1]$$

$$\rightarrow y_2[n] = x_2^2[n] = x^2[n-1]$$

\rightarrow Time invariant

$$y[n-1] = x^2[n-1]$$