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

$x_1[n] = x[n - n_0]$

$\rightarrow y_1[n] = n \cdot x_1[n]$

$= n \cdot x[n - n_0]$.

$y[n - n_0] = (n - n_0) \cdot x[n - n_0]$

$y_1[n] \neq y[n - n_0]$

→ not time-invariant

$x_1[n] = a\, x_{a1}[n]$

$x_1[n] \rightarrow y_1[n] = n \cdot x_1[n]$

$= n \cdot a \cdot x[n]$; $a \cdot y[n] = n \cdot a \cdot x[n]$

$\rightarrow y_1[n] = y[n] \cdot a$