Señales Impulso deltas LIT

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x(n) = (0.8)^n·u(n).

h(n) = (1/3)[δ(n) + δ(n-1) + δ(n-2)]

$$y(n)=\sum_{k=-\infty}^{\infty} x(k)\,y(n-k) = \sum_{k=-\infty}^{\infty} x(k)\,\frac{1}{3}\left[\delta(n-k)+\delta(n-k-1)+\delta(n-k-2)\right]$$

$$\sum x(k)\,\delta(n-k)=x(n)$$

$$y(n)=\frac{1}{3}\left[x(n)+x(n-1)+x(n-2)\right]$$

$n<0 \quad x(n)=0 \quad y(n)=0$

$n\geq 0 \quad x(n)=0.8^{n}$

$$y(n)=\frac{1}{3}\left[0.8^{n}+0.8^{n-1}+0.8^{n-2}\right]$$

Si $n=0 \quad y(0)=\frac{1}{3}\left[0.8^{0}+0.8^{-1}+0.8^{-2}\right]=1.27$

Si $n=1 \quad y(1)=\frac{1}{3}\left[0.8^{1}+0.8^{0}+0.8^{-1}\right]=1.02$