la sortie $y(n) = g_2(n)$

On reprend le calcul

$n=0 \quad y(0) = g_2(0) = \frac{x(0)}{2} = \frac{\delta(0)}{2}.$

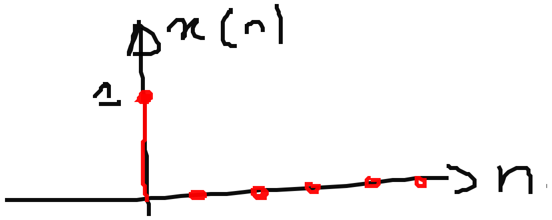
$n=1 \quad y(1) = g_2(1) = \frac{x(1)}{2} + \frac{y(0)}{2}.$

$= 0 + \frac{\delta(0)}{2} \times \frac{1}{2}.$

$= \frac{\delta(0)}{4}$

$x(0) = \delta(0)$

$x(n) = 0 \quad n > 0$

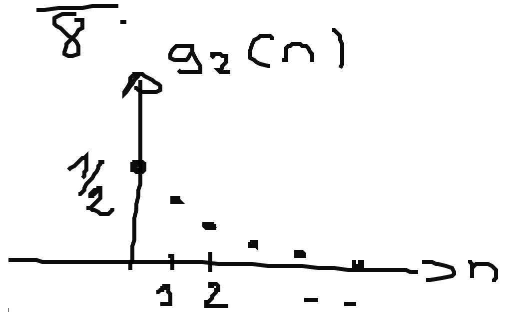


$y(2) = g_2(2) = \frac{x(2)}{2} + \frac{y(1)}{2}.$

$= 0 + \frac{\delta(0)}{4} \times \frac{1}{2}.$

$= \frac{\delta(0)}{8}.$

$\Rightarrow \boxed{g_2(n) = \left(\frac{1}{2}\right)^{n+1}}$



$G_2(z) = TZ(g_2(n))$

$$G_2(z) = \sum_{n=0}^{\infty} g_2(n) z^{-n} = \sum \left(\frac{1}{2}\right)^{n+1} z^{-n}$$

$$= \frac{1}{2} \sum_{n=0}^{\infty} \left(\frac{1}{2}\right)^{n} z^{-n} \Rightarrow$$

Domaine de Convergence $|z| > \frac{1}{2}.$

cf 1 exo $a = \frac{1}{2}.$