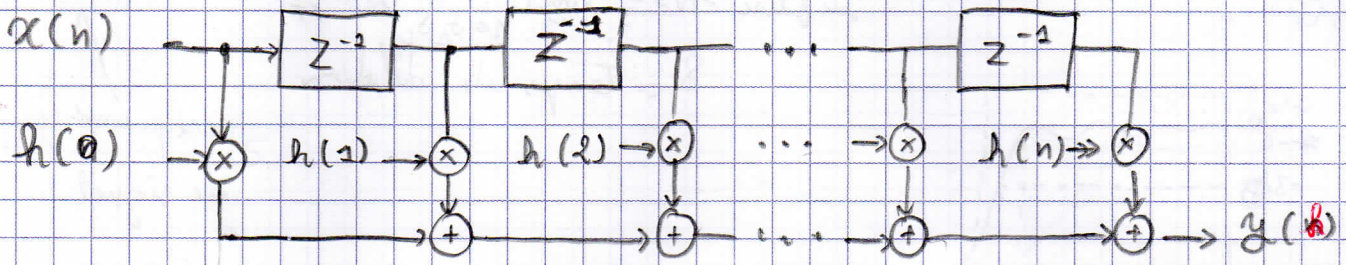
$$H(z) = \sum_{n=0}^{N-1} h(n)\, z^{-n}$$



14-04-2024

$$RIF = \sum_{n=0}^{N-1} h(n)\, z^{-1}$$

$$RII = \sum_{n=0}^{q} bn\, x_{k-n} - \sum_{n=0}^{p} an\, x(k-n)$$

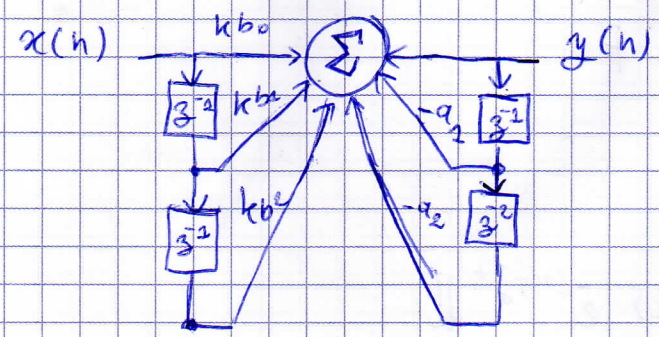
→ Forme direct I : $\frac{y(z)}{x(z)} = k\, \frac{b_0 + b_1 z^{-1} + b_2 z^{-2} \dots}{1 + a_1 z^{-1} + a_2 z^{-2} \dots}$

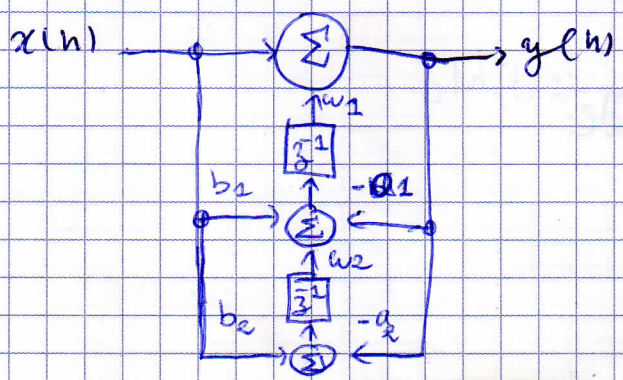
→ Forme direct II : $y(n) = b_0 + w_1(n-1)$

$w(n-1) = b_1 x(n) - a_1 y(n) + w_2(n-1)$

$w(n-2) = b_2 x(n) - a_2 y(n)$

Fd 1





Filter Designer: on mathlab

fréquence stack band → f_p ; f_a ← fréquence d'arrêt

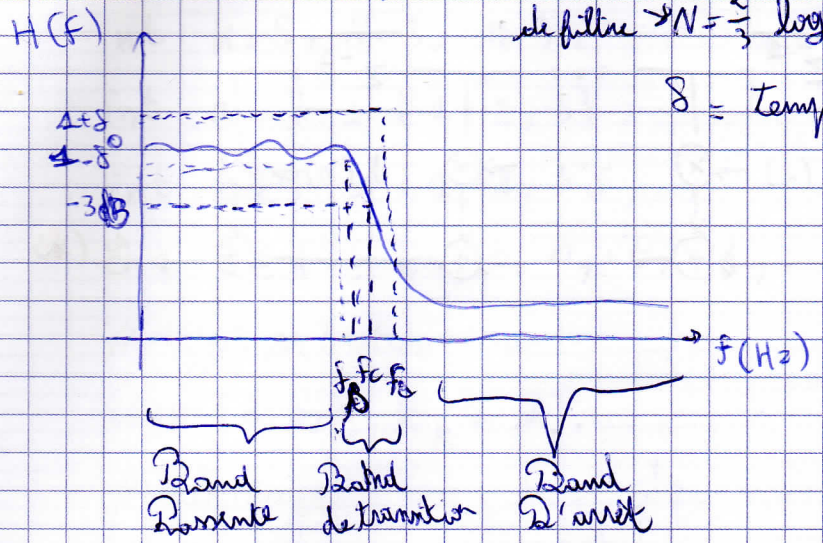
$H(f_c) \approx -3\,dB \Rightarrow \frac{H(f_c)}{H(0)} = \frac{1}{\sqrt{2}}$

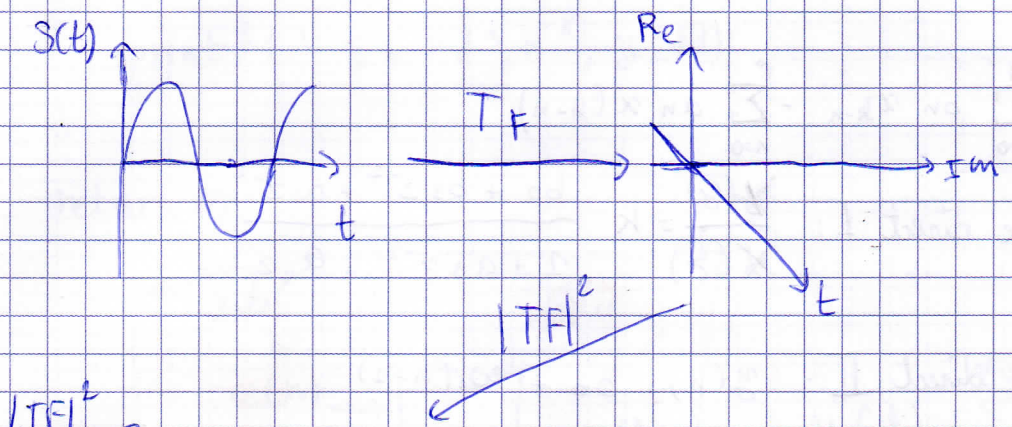
$F_c = \frac{f_p + f_a}{2}$

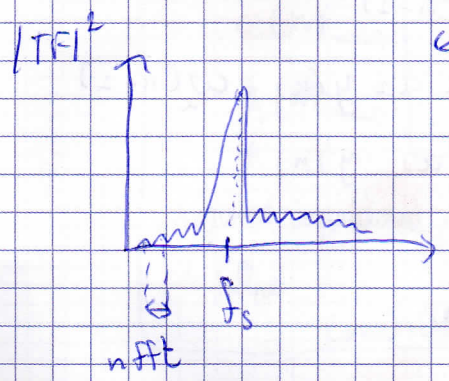
ordre de filtre $\rightarrow N = \frac{2}{3}\log\left(\frac{1}{10\,\delta_1\delta_2}\right)\frac{f_e}{\delta f}$; $\delta f = f_a - f_c$

δ = temps de délation

fréquence de signal







$$TF = \int_{-\infty}^{+\infty} x(t)\, e^{-2\pi f_j t}\, dt$$

$$TF \approx \sum_{n=-\infty}^{+\infty} x(nTe)\, e^{-2\pi f_j n Te}$$