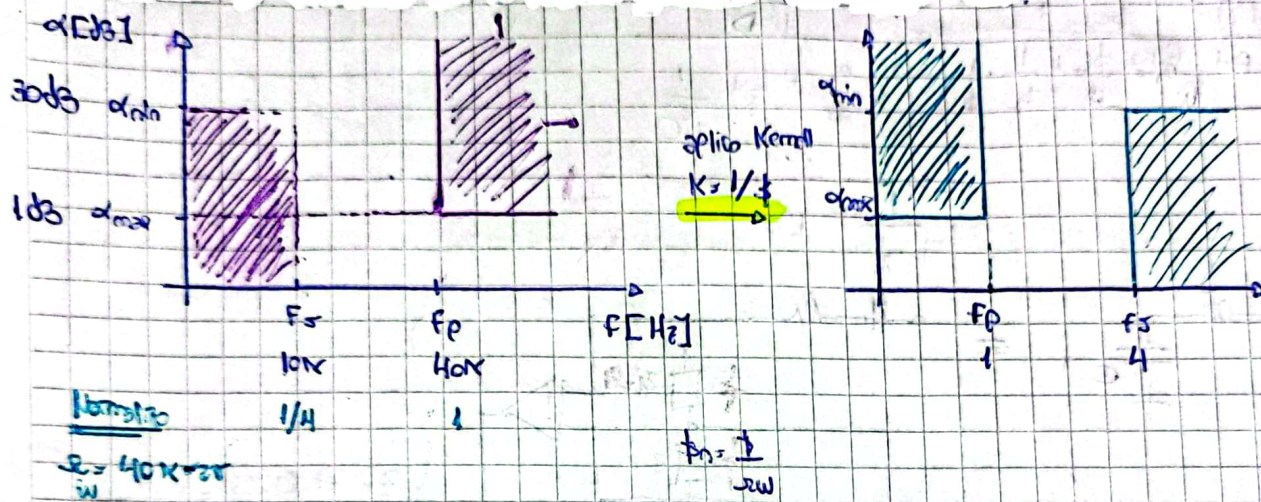


# Tarea Semanal 4 → Diseño Máx Planicidad Para Altos

## ① Paso de Plantilla PA a PB



## ② Diseño Filtro con forma PB

$$|H(f)|^2 = \frac{1}{1 + \epsilon^2 \cdot \omega^{2n}}$$

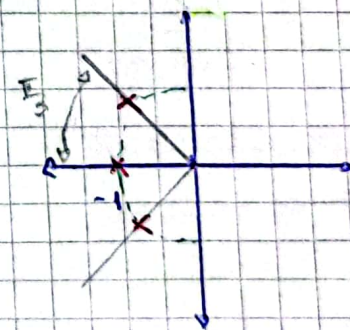
$$\epsilon = \sqrt{10^{\frac{\alpha_{max}}{10}} - 1} = 0,5088$$

$$\alpha_{min} < 10 \log(1 + \epsilon^2 \cdot \omega_s^{2n})$$

Itero	$\alpha_{min}$
$n=1$	7,11dB X
$n=2$	18,28dB X
$n=3$	30,25dB ✓

→ Normalización Butter  $\epsilon \cdot \omega_p = \epsilon_s \cdot \omega_s \rightarrow \phi = \phi_n \cdot \omega \cdot \epsilon$

$$H(f)_{PB} = \frac{1}{\phi_n^2 + 1} \cdot \frac{1}{\phi_n + 1} \cdot \frac{1}{\phi_n + 1}$$



$$Q = \frac{1}{2 \cos(\frac{\pi}{2n})} = 1$$

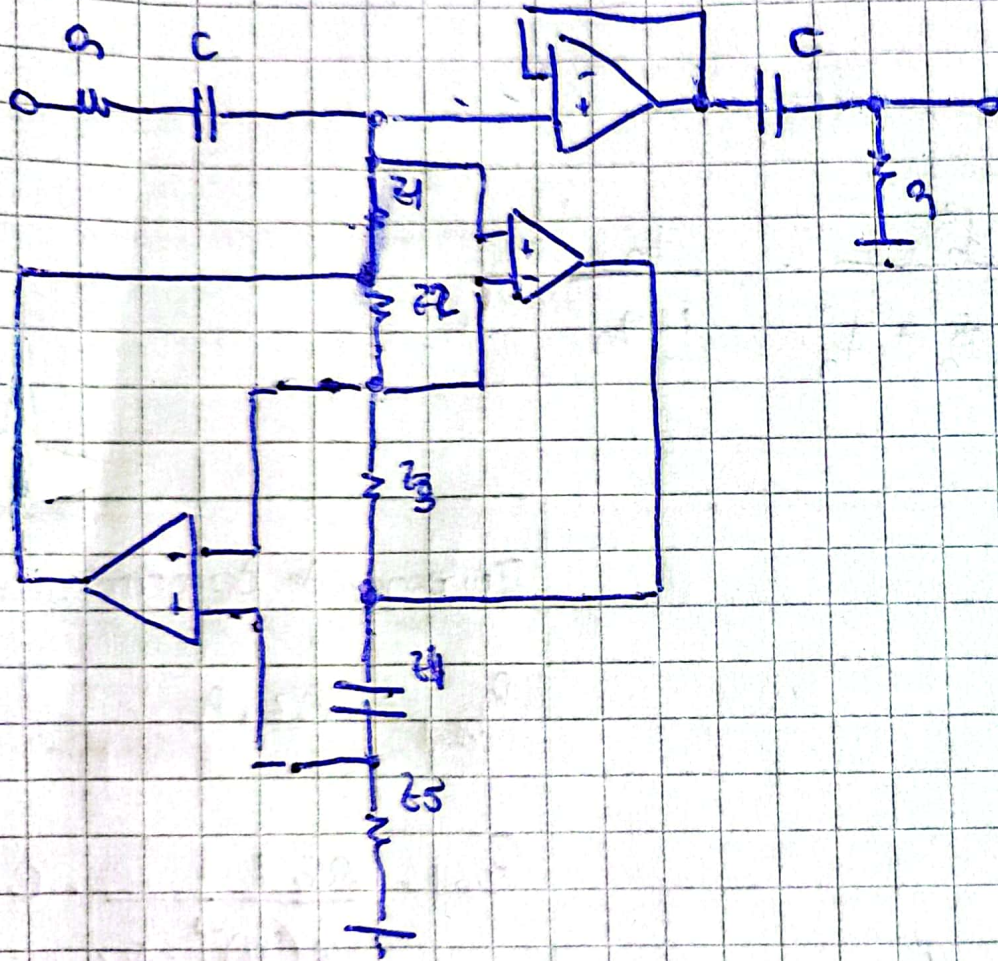
NOTA







B Active Inductor



$$Z_{eq} = \frac{Z_1 \cdot Z_3 \cdot Z_5}{Z_2 \cdot Z_4}$$

$$\phi \text{ stability } N = \frac{1002 \cdot 1002 \cdot 1002}{\frac{1}{\phi \cdot 1000000} \cdot 1002}$$