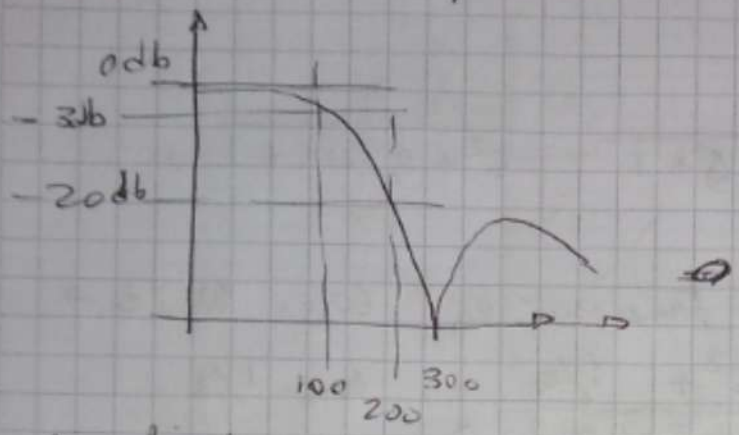
TS6

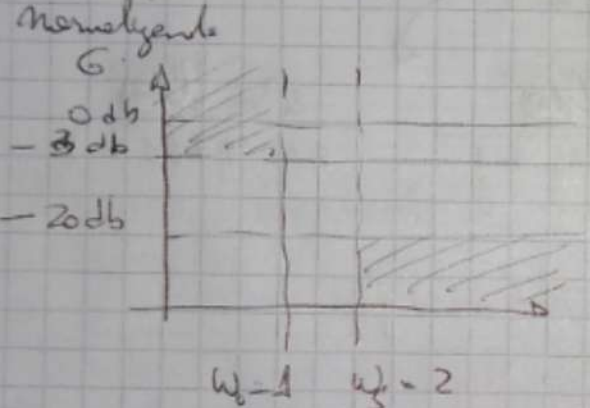
HOJA N°

FECHA

① Partimos de una plantilla normalizada pasa bajos

Pasa altos





y colocamos un cero de transmisión en

$$\omega_N = 3\omega_0 \Rightarrow \omega_N = 3$$

Con lo que la forma final debe ser

$$T(s) \in \frac{as^2 + c\omega_0^2}{s^2 + \frac{\omega_0}{Q} + \omega_0^2}$$

(en el estabilidad) → colocamos el cero en $\omega_N = 1/3\,\omega_0$ para pasa-altos.

⇓

Como es MP ⇒ $\boxed{\varepsilon^2 = 1}$

$n = 2$. $20db = 10 \log\left(1 + \varepsilon^2 \omega_s^{2n}\right)$

$= 13db$ ✗

$n = 3$ ∠ $20db$ ✗

$n = 4 \Rightarrow \alpha = 10 \log\left(1 + \varepsilon^2 2^8\right)$

$\boxed{\alpha = 24db \text{ @ } n = 4}$ ✓

$$T(\$) = \frac{1}{\$^2 + 1{,}85\$ + 1} \cdot \frac{1}{\$^2 + 0{,}766\$ + 1}$$

$$\$ = \frac{1}{S}$$

$$T(S) = \frac{S^2}{S^2 + 1{,}851S + 1} \cdot \frac{S^2}{S^2 + 0{,}766S + 1}$$

Ahora colocamos un cero de transmisión en $\omega_N = \omega_0/3 \Rightarrow$ $\omega_N = 1/3$.

$$T(S) = \frac{S^4 + 2 \cdot 1/9\, S^2 + 1/9}{S^4 + 2{,}6S^3 + 3{,}4S^2 + 2{,}6S + 1}$$

$$T(S) = \frac{S^2 + (1/3)^2}{S^2 + 1{,}85S + 1} \cdot \frac{S^2 + (1/3)^2}{S^2 + 0{,}766 + 1}$$

HOJA Nº

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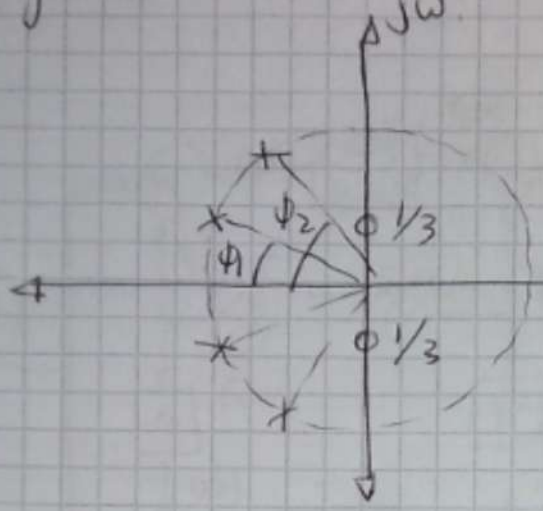
Polos y ceros



$\phi_2 = 67,5°$ $\begin{cases} \sigma_2 = \frac{1}{0,766} \\ \sigma_2 = \frac{1}{2\cos\phi_2} \end{cases}$

$\phi_1 = 22,5°$ $\begin{cases} \sigma_1 = \frac{1}{1,85} \\ \sigma_1 = \frac{1}{2\cos\phi_1} \end{cases}$