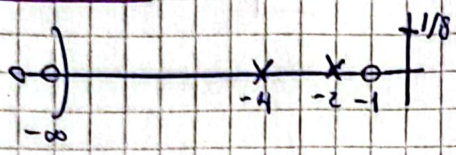
HOJA N°

FECHA

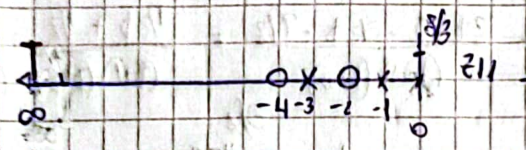
Síntesis por Parámetros Z → Función Estrictamente decreciente

$$T(s) = \frac{V_2}{V_1}\Big|_{I_2=0} = \frac{K(s+1)}{(s+2)(s+4)} = \frac{z_{12}}{z_{11}}$$

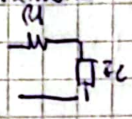
① Método Gráfico



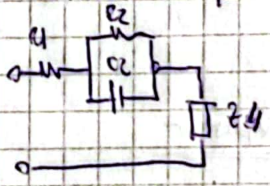
$$z_{11} = \frac{(s+2)(s+4)}{(s+3)(s+1)} \qquad Z_{RC}(0) > Z_{RC}(\infty)$$

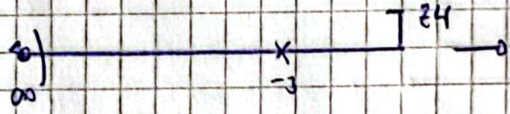


z_{11} → Remuevo valor en ∞

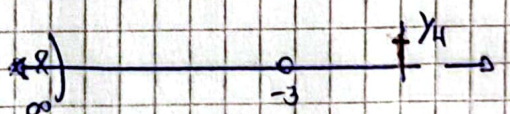


z_2 → Remuevo RC polo en -1

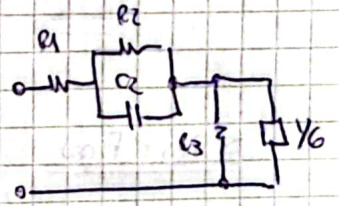


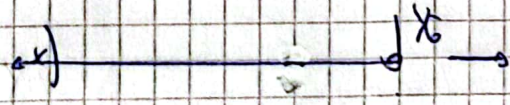


z_4 → Invierto y Y



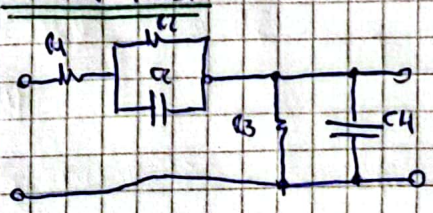
Y_4 → Remuevo valor en 0





Y_6 → Remuevo capacitor

② Síntesis Final

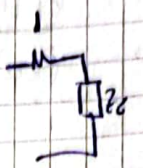


NOTA

② Método Analítico

$$z_1 = \frac{(s+2)(s+4)}{(s+3)(s+1)}$$

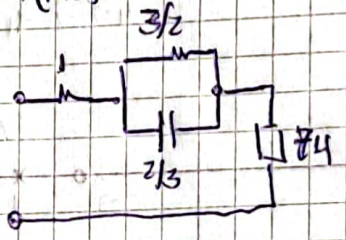
Asumiendo Valor en ∞ → $\lim_{s\to\infty} z_{11} = 1$



$$z_2 = z_{11} - 1 = \frac{s^2+6s+8-(s^2+4s+3)}{(s+3)(s+1)} = \frac{2s+5}{(s+3)(s+1)}$$

Asumiendo tanque AC inic en $s=-1$ → $K = \lim_{s\to -1} z_2 \cdot (s+1) = \frac{2(-1)+5}{-1+3} = 3/2$

$$z_4 = z_2 - \frac{K}{s+1} = \frac{2s+5}{(s+3)(s+1)} - \frac{3/2}{(s+1)} \cdot \frac{(s+3)}{(s+3)} = \frac{2s+5-3/2s-9/2}{(s+1)(s+3)} = \frac{1/2s+1/2}{(s+1)(s+3)} = \frac{1/2(s+1)}{(s+3)(s+1)}$$



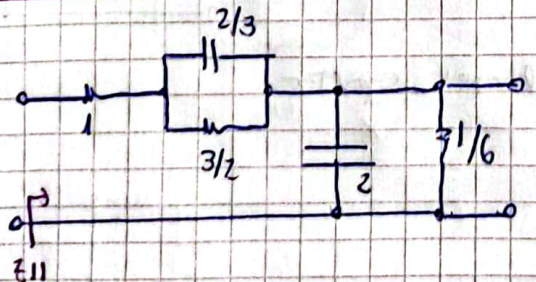
Invirtiendo a admitancia

$$Y_4 = 2(s+3)$$

Extrayendo capacitor y resistor

$$Y_4 = 2s+6 \equiv$$

Circuito final



NOTA