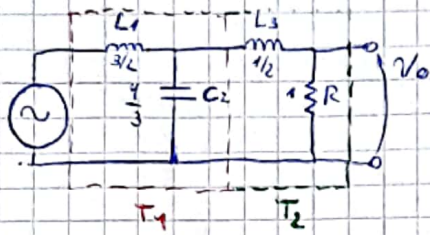


Ejercicio # 2



$$T_1 = \begin{bmatrix} 1 + s^2 L_1 C_2 & s L_1 \\ s C_2 & 1 + s^2 L_1 C_2 \end{bmatrix}$$

$$T_2 = \begin{bmatrix} 1 + s L_3 / R & s L_3 \\ 1/R & 1 + s L_3 / R \end{bmatrix}$$

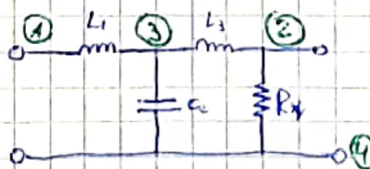
$$T_t = T_1 \cdot T_2 = \begin{bmatrix} 1 + s^2 L_1 C_2 & s L_1 \\ s C_2 & 1 + s^2 L_1 C_2 \end{bmatrix} \cdot \begin{bmatrix} \frac{R + s L_3}{R} & s L_3 \\ 1/R & \frac{R + s L_3}{R} \end{bmatrix}$$

$$T_t = \begin{bmatrix} \frac{(1 + s^2 L_1 C_2)(R + s L_3) + s L_1}{R} & \frac{s L_3 \cdot (1 + s^2 L_1 C_2) + s L_1 R + s^2 L_1 L_3}{R} \\ \frac{s C_2 R + s^2 L_3 C_2 + 1}{R} + \frac{s^2 L_1 C_2}{R} & \frac{s^2 C_2 L_3 + (1 + s^2 L_1 C_2)(R + s L_3)}{R} \end{bmatrix}$$

$$A = \frac{V_1}{V_2} \Big|_{I_2=0} \Rightarrow \frac{V_0}{V_i} = \frac{1}{A} = \left(\frac{s^3 L_1 C_2 L_3 + s^2 L_1 C_2 R + s(L_3 + L_1) + R}{R} \right)^{-1}$$

$$\frac{V_0}{V_i} = \frac{R}{L_1 C_2 L_3 s^3 + \frac{s^2 R}{L_3} + s \frac{L_1 + L_3}{L_1 C_2 L_3} + \frac{R}{L_1 C_2 L_3}}$$

$$\frac{V_0}{V_i} = \frac{1}{s^3 + 2 \cdot s^2 + 2s + 1}$$



$$MAI: \begin{bmatrix} 1/s L_1 & 0 & -1/s L_1 & 0 \\ 0 & 1/s L_3 + 1/R & -1/s L_3 & -1/R \\ -1/s L_1 & -1/s L_3 & s C_2 + 1/(L_1 + L_3) & -s C_2 \\ 0 & -1/R & -s C_2 & s C_2 + 1/R \end{bmatrix}$$