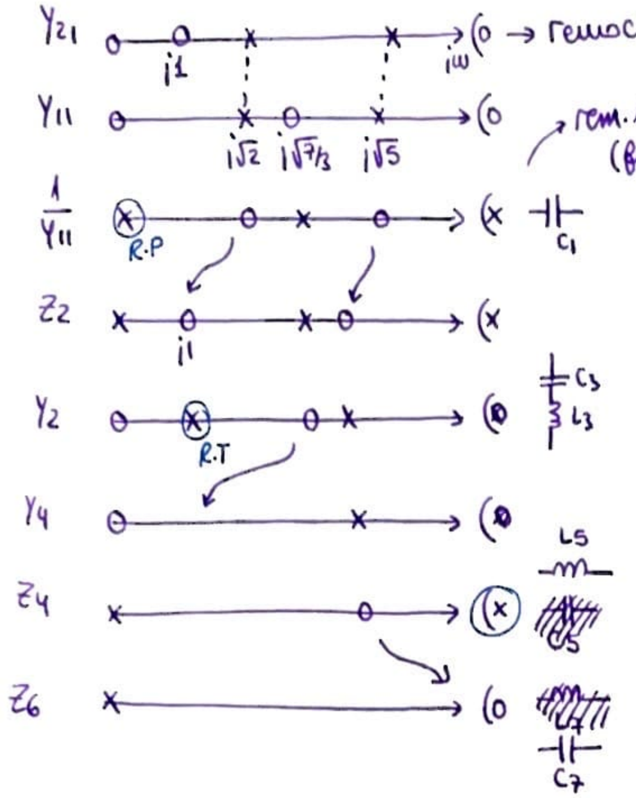
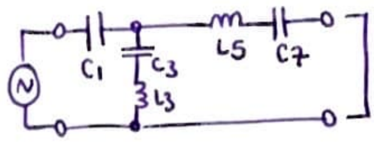
$$Y_{11} = \left.\frac{I_1}{V_1}\right|_{V_2=0} = \frac{3s(s^2+7/3)}{(s^2+2)(s^2+5)} \qquad Y_{21} = \left.\frac{I_2}{V_1}\right|_{V_2=0} = \frac{s(s^2+1)}{(s^2+2)(s^2+5)}$$



→ remociones: 0, 1, ∞

rem. inicial en Z (fuente de V)

⇒ Topología obtenida:



Síntesis analítica:

$$\frac{1}{Y_{11}} = \frac{(s^2+2)(s^2+5)}{3s(s^2+7/3)} \qquad \left.\frac{1}{Y_{11}} - \frac{1}{sC_1}\right|_{s^2=-1} = 0$$

$$C_1 = \left.\frac{Y_{11}}{s}\right|_{s^2=-1} = \frac{3(-1+7/3)}{(-1+2)(-1+5)} = 1$$

$$Z_2 = \frac{1}{Y_{11}} - \frac{1}{sC_1} = \frac{s^4+7s^2+10-3(s^2+7/3)}{3s(s^2+7/3)} = \frac{s^4+4s^2+3}{3s(s^2+7/3)}$$

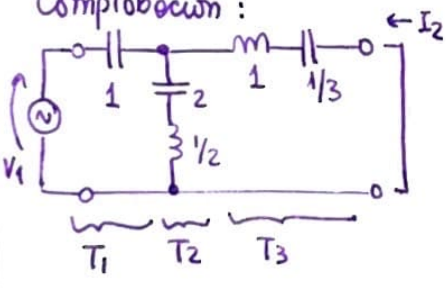
$$Y_2 = \frac{3s(s^2+7/3)}{(s^2+1)(s^2+3)}$$

$$\lim_{s^2\to -1} \frac{2k_3 \cdot s}{s^2+1} = \lim_{s^2\to -1} Y_2 \rightarrow 2k_3 = \lim_{s^2\to -1} Y_{22}\frac{(s^2+1)}{s}$$

$$2k_3 = \left.\frac{3(s^2+7/3)}{s^2+3}\right|_{s^2=-1} = \frac{4}{2} = 2 \rightarrow \frac{2k_3 \cdot s}{s^2+1} : Y \rightarrow L_3 = \frac{1}{2k_3} \quad C_3 = 2k_3 \rightarrow L_3 = \frac{1}{2} \quad C_3 = 2$$

$$Y_4 = \frac{3s^3+7s-2s(s^2+3)}{(s^2+1)(s^2+3)} = \frac{s^3+s}{(s^2+1)(s^2+3)} = \frac{s}{s^2+3} \rightarrow Z_4 = \frac{s^2+3}{s} = s + \frac{3}{s} \rightarrow L_5 = 1 \quad C_7 = \frac{1}{3}$$

Comprobación:



$$T_1 = \begin{pmatrix} 1 & 1/s \\ 0 & 1 \end{pmatrix} \quad T_2 = \begin{pmatrix} 1 & 0 \\ \frac{1}{\frac{s}{2}+\frac{1}{2s}} & 1 \end{pmatrix} = \begin{pmatrix} 1 & 0 \\ \frac{2s}{s^2+1} & 1 \end{pmatrix} \quad T_3 = \begin{pmatrix} 1 & s+\frac{3}{s} \\ 0 & 1 \end{pmatrix} = \begin{pmatrix} 1 & \frac{s^2+3}{s} \\ 0 & 1 \end{pmatrix}$$

$$T_{23} = \begin{pmatrix} 1\cdot 1 + \cancel{0\cdot 0} & 1\cdot\frac{s^2+3}{s} + \cancel{0\cdot 1} \\ \frac{2s}{s^2+1}\cdot 1 + \cancel{1\cdot 0} & \frac{2s}{s^2+1}\cdot\frac{s^2+3}{s} + 1\cdot 1 \end{pmatrix} = \begin{pmatrix} 1 & \frac{s^2+3}{s} \\ \frac{2s}{s^2+1} & \frac{2(s^2+3)+(s^2+1)}{s^2+1} \end{pmatrix}$$

$$T_{23} = \begin{pmatrix} 1 & \frac{s^2+3}{s} \\ \frac{2s}{s^2+1} & \frac{3s^2+7}{s^2+1} \end{pmatrix}$$

$$T: \begin{cases} V_1 = AV_2 + B(-I_2) \\ I_1 = CV_2 + D(-I_2) \end{cases}$$

$Y_{21} = \frac{1}{B}$ (coincide con la cond. de medición)

$$B = 1\cdot\frac{s^2+3}{s} + \frac{1}{s}\cdot\frac{3s^2+7}{s^2+1} = \frac{(s^2+3)(s^2+1)+3s^2+7}{s(s^2+1)} = \frac{s^4+7s^2+10}{s(s^2+1)}$$

$$= \frac{(s^2+2)(s^2+5)}{s(s^2+1)}$$

$\Rightarrow \frac{1}{B} = \frac{s(s^2+1)}{(s^2+2)(s^2+5)}$ → Se cumple la transf. solicitada con el cuadripolo propuesto.