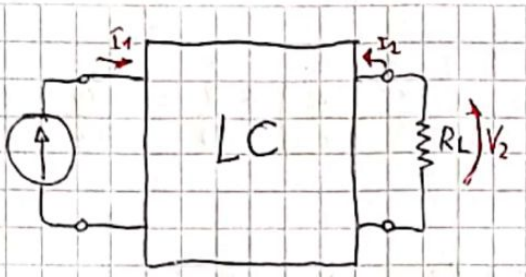
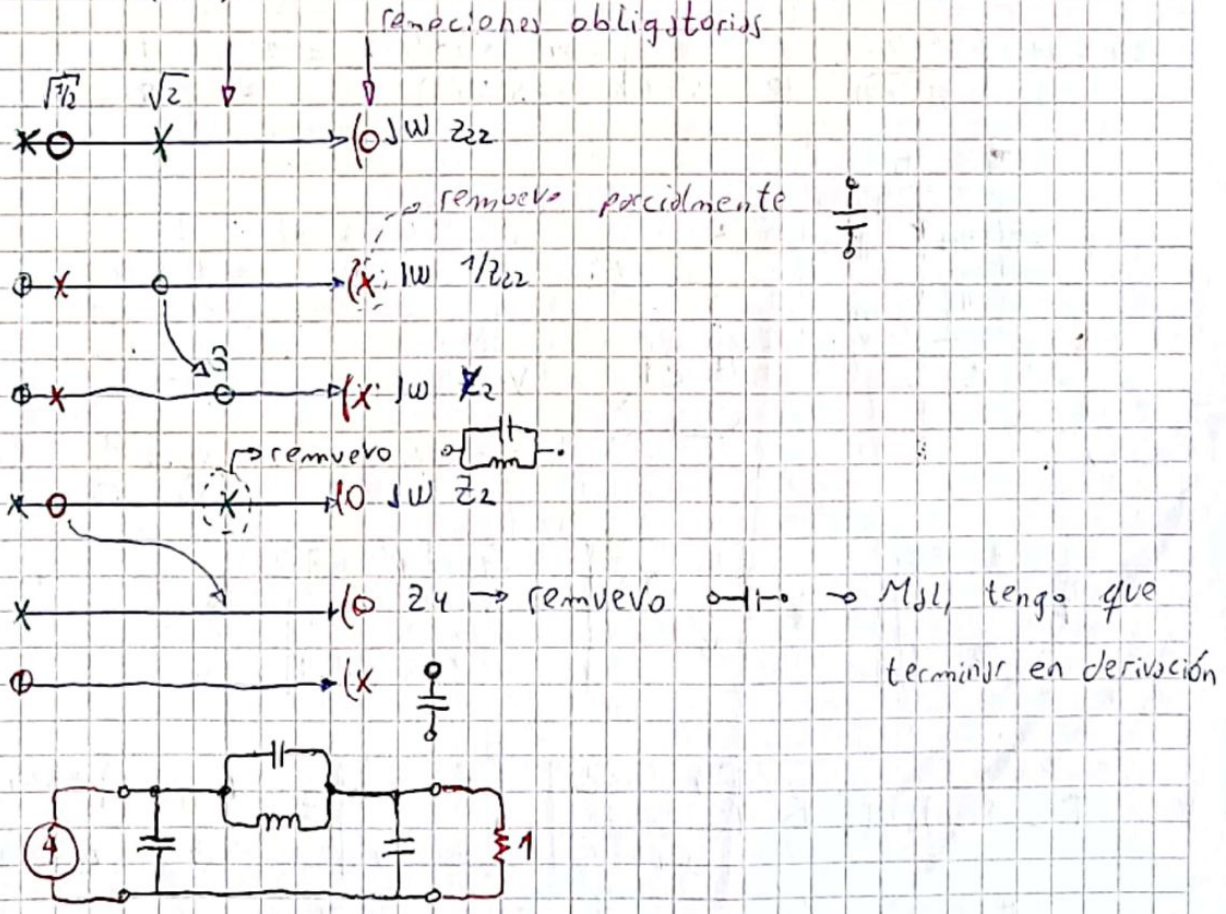


$$T(s) = \frac{V_2}{I_1} = \frac{K\,(s^2+9)}{s^3+2s^2+2s+1}\Big|_{I_2 = -V_2/R_L}$$

$$V_2 = z_{11} I_1 + z_{12} I_2 \Rightarrow V_2 + V_2 \frac{z_{22}}{R_L} = z_{21} I_1 \Rightarrow \frac{V_2}{I_1} = \frac{z_{21}\cdot R_L}{R_L + z_{22}}$$

$$\text{Si } z = R_L \Rightarrow \frac{V_2}{I_1}\Big|_{I_2=-V_2/R_L} = \frac{z_{21}}{1+z_{22}} = K\,\frac{(s^2+9)}{s^3+2s^2+2s+1} = K\cdot \frac{\text{Por } \{s^2+9\}\, z_{21}}{1+\frac{2s^2+1}{s^3+2s}}$$

$$z_{22} = 2\cdot\frac{s^2+1/2}{s(s^2+2)}$$



$$z_{21} = 2\,\frac{s^2+1/2}{s(s+2)} \quad ; \quad \frac{1}{z_{22}} = \frac{1}{2}\cdot\frac{s(s^2+2)}{s^2+1/2}$$

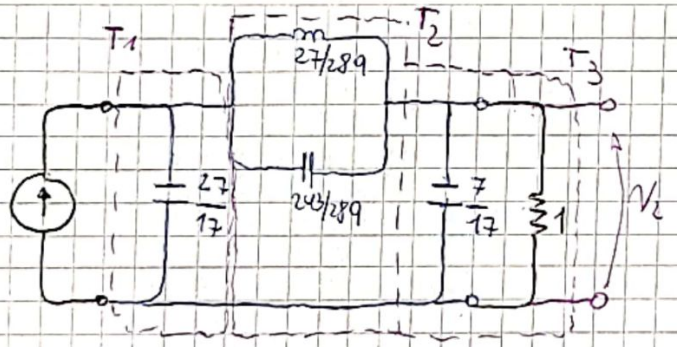
$$Y_2 = \frac{1}{z_{22}} - k_\infty \cdot s \qquad k_\infty = \lim_{s^2\to 9}\frac{1}{z_{22}}\cdot\frac{3k}{s} = \lim_{s^2\to -9}\frac{1}{2}\left(\frac{s^2+2}{s^2+1/2}\right) = \frac{7}{17} = \frac{14}{17}\cdot\frac{1}{2}$$

$$Y_2 = \frac{1}{2}\left(\frac{s^3+2s-\frac{14}{17}s^3-\frac{19}{34}s}{s^2+1/2}\right) = \frac{13}{34}\,\frac{s^3+9s}{s^2+1/2} = \frac{13}{34}\,\frac{s(s^2+9)}{s^2+1/2}$$

$$z_2 = \frac{34}{3}\cdot\frac{s^2+1/2}{s(s^2+9)} \quad ; \quad z_4 = z_2 - \frac{2k_3 s}{s^2+9} \Rightarrow 2k_3 = \lim_{s^2\to -9} z_2\cdot\frac{s^2+9}{s}$$

$$2k_3 = \frac{34}{3}\,\frac{s^2+1/2}{s^2} = \frac{289}{27} = \frac{34}{3}\cdot\frac{17}{18}$$

$$z_4 = \frac{34}{3}\cdot\left(\frac{s^2+1/2}{s(s^2+9)} - \frac{17}{18}\cdot\frac{s}{s^2+9}\right) = \frac{34}{3}\,\frac{s^2+1/2-\frac{17}{18}s^2}{s(s^2+9)} = \frac{17}{27}\cdot\frac{1}{s}$$



$$T_1 \cdot T_2 = \begin{bmatrix} 1 & 0 \\ \frac{s27}{17} & 1 \end{bmatrix} \cdot \begin{bmatrix} 1 & \frac{289}{27}\frac{s}{s^2+9} \\ 0 & 1 \end{bmatrix} = \begin{bmatrix} 1 & \frac{289}{27}\cdot\frac{s}{s^2+9} \\ \frac{27}{17}s & \frac{185^2+9}{s^2+9} \end{bmatrix}$$

$$T_1\cdot T_2\cdot T_3 = \begin{bmatrix} 1 & \frac{289}{27}\frac{s}{s^2+9} \\ \frac{27}{17}s & \frac{185^2+9}{s^2+9} \end{bmatrix} \cdot \begin{bmatrix} 1 & 0 \\ \frac{7}{17}s+1 & 1 \end{bmatrix}$$

$$C = \frac{27\cdot s}{17} + \left(\frac{7}{17}s+1\right)\left(\frac{185^2+9}{s^2+9}\right) = \frac{27s\cdot(s^2+9)+(7s+17)\cdot(185^2+9)}{17(s^2+9)}$$

$$C = \frac{27s^3+243s+126s^3+63s+306s^2+153}{17(s^2+9)} = \frac{153s^3+306s^2+306s+153}{17(s^2+9)}$$

$$T(s) = \left.\frac{V_2}{I_1}\right|_{I_2=\frac{V_2}{R_L}} = \frac{1}{C} = \underbrace{\frac{17}{153}}_{K}\cdot\frac{s^2+9}{s^3+2s^2+2s+1}$$