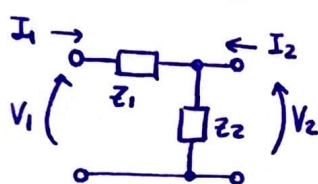


$$\left\{ L_1 = 3/2 \quad C_2 = 4/3 \quad L_3 = 1/2 \quad R = 1 \right\}$$



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

$$T = \begin{pmatrix} \frac{Z_1 + Z_2}{Z_2} & Z_1 \\ \frac{1}{Z_2} & 1 \end{pmatrix}$$

$$\begin{cases} A = \frac{V_1}{V_2} \Big|_{(-I_2)=0} = \frac{V_1}{V_1 \cdot \frac{Z_2}{Z_1 + Z_2}} = \frac{Z_1 + Z_2}{Z_2} \\ B = \frac{V_1}{-I_2} \Big|_{V_2=0} = \frac{V_1}{V_1/Z_1} = Z_1 \\ C = \frac{I_1}{V_2} \Big|_{(-I_2)=0} = \frac{I_1}{I_1(Z_1 + Z_2) \frac{Z_2}{Z_1 + Z_2}} = \frac{1}{Z_2} \\ D = \frac{-I_2}{I_1} \Big|_{V_2=0} = 1 \end{cases}$$

$$T_1 = \begin{pmatrix} \frac{SL_1 + 1/SC_2}{1/Z_2} & SL_1 \\ 1/SC_2 & 1 \end{pmatrix} = \begin{pmatrix} S^2 L_1 C_2 + 1 & SL_1 \\ SC_2 & 1 \end{pmatrix} = \begin{pmatrix} S^2 \cdot 2 + 1 & S \cdot 3/2 \\ S \cdot 4/3 & 1 \end{pmatrix}$$

$$T_2 = \begin{pmatrix} \frac{SL_3 + R}{R} & SL_3 \\ 1/R & 1 \end{pmatrix} = \begin{pmatrix} S \cdot 1/2 + 1 & S \cdot 1/2 \\ 1 & 1 \end{pmatrix}$$

$$T_{TOT} = \begin{pmatrix} (2S^2 + 1)\left(\frac{S}{2} + 1\right) + \left(\frac{3}{2}S\right) \cdot (1) & (2S^2 + 1)\left(\frac{S}{2}\right) + \left(\frac{3}{2}S\right)(1) \\ \left(S \cdot \frac{4}{3}\right)\left(\frac{S}{2} + 1\right) + (1)(1) & \left(S \cdot \frac{4}{3}\right)\left(\frac{S}{2}\right) + (1)(1) \end{pmatrix}$$

$$\frac{V_o}{V_i} \Big|_{I_o=0} = \frac{1}{A} = \frac{1}{S^3 + 2S^2 + S/2 + 1 + 3S/2} = \frac{1}{S^3 + 2S^2 + 2S + 1}$$