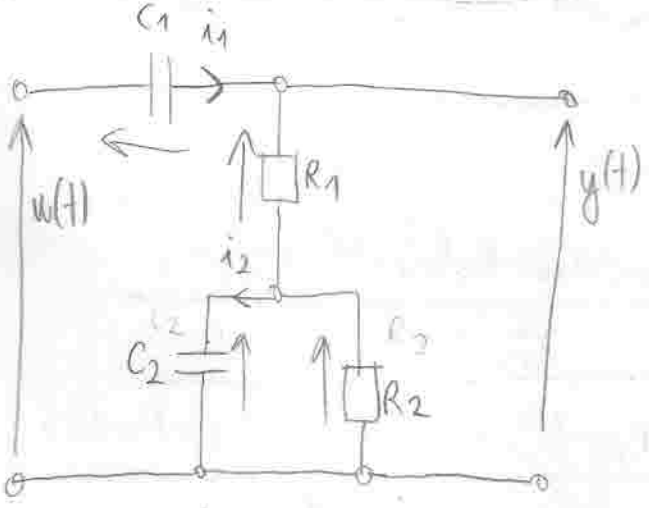

$\mathcal{L}[u(t)] = U(s)$

$\mathcal{L}[y(t)] = Y(s)$

$\mathcal{L}[i_1(t)] = J_1(s)$

$\mathcal{L}[i_2(t)] = J_2(s)$

$\tau = R \cdot C \ [s]$

$\tau = \frac{L}{R} \ [s]$

$$G(s) = \frac{Y(s)}{U(s)}$$

$$\begin{cases} u(t) = \frac{1}{C_1} \cdot \int_0^+ i_1(t) \cdot dt + R_1 \cdot i_1(t) + \frac{1}{C_2} \int_0^+ i_2(t) \cdot dt \\ 0 = \frac{1}{C_2} \cdot \int_0^+ i_2(t) \cdot dt - R_2 (i_1(t) - i_2(t)) \\ y(t) = R_1 \cdot i_1(t) + R_2 \cdot (i_1(t) - i_2(t)) \end{cases}$$

$$\begin{cases} U(s) = \frac{1}{C_1} \cdot \frac{J_1(s)}{s} + R_1 \cdot J_1(s) + \frac{1}{C_2} \cdot \frac{J_2(s)}{s} & (1) \\ 0 = \frac{1}{C_2} \cdot \frac{J_2(s)}{s} - R_2 \cdot (J_1(s) - J_2(s)) & (2) \\ Y(s) = R_1 \cdot J_1(s) + R_2 (J_1(s) - J_2(s)) & (3) \end{cases}$$

$$R_2 \cdot J_1(s) - R_2 \cdot J_2(s) = \frac{1}{C_2 \cdot s} \cdot J_2(s)$$

$$R_2 \cdot J_1(s) = \frac{1}{C_2 \cdot s} \cdot J_2(s) + R_2 \cdot J_2(s)$$

$$R_2 \cdot J_1(s) = J_2(s) \cdot \left(\frac{1}{C_2 \cdot s} + R_2 \right)$$

$$J_2(s) = \frac{R_2 \cdot J_1(s)}{\frac{1}{C_2 \cdot s} + R_2}$$

$$U(s) = \frac{1}{C_1} \cdot \frac{J_1(s)}{s} + R_1 \cdot J(s) + \frac{1}{C_2 \cdot s} \cdot \frac{R_2 \cdot J_1(s)}{\frac{1}{C_2 \cdot s} + R_2}$$

$$Y(s) = R_1 J_1(s) + R_2 \cdot J_1(s) - R_2 \cdot \frac{R_2 \cdot J_1(s)}{\frac{1}{C_2 \cdot s} + R_2}$$

$$G(s) = \frac{Y(s)}{U(s)} = \frac{\cancel{I_1(s)} \cdot \left[R_1 + R_2 - \frac{R_2^2}{\frac{1}{C_2 \cdot s} + R_2} \right]}{\cancel{I_1(s)} \cdot \left[\frac{1}{C_1 \cdot s} + R_1 + \frac{R_2}{\frac{1}{C_2 \cdot s} + R_2} \right]}$$

$$G(s) = \frac{R_1 + R_2 - \frac{R_2^2}{\frac{1}{C_2 \cdot s} + R_2}}{R_1 + \frac{1}{C_1 \cdot s} + \frac{R_2}{\frac{1}{C_2 \cdot s} + R_2}} = \frac{\frac{R_1 \left(\frac{1}{C_2 \cdot s} + R_2 \right) + R_2 \left(\frac{1}{C_2 \cdot s} + R_2 \right) - R_2^2}{\frac{1}{C_2 \cdot s} + R_2}}{\frac{R_1 \cdot C_1 s \cdot \left(\frac{1}{C_2 \cdot s} + R_2 \right) + \left(\frac{1}{C_2 \cdot s} + R_2 \right) + R_2 \cdot C_1 s}{C_1 s \cdot \left(\frac{1}{C_2 \cdot s} + R_2 \right)}}$$

$$G(s) =$$