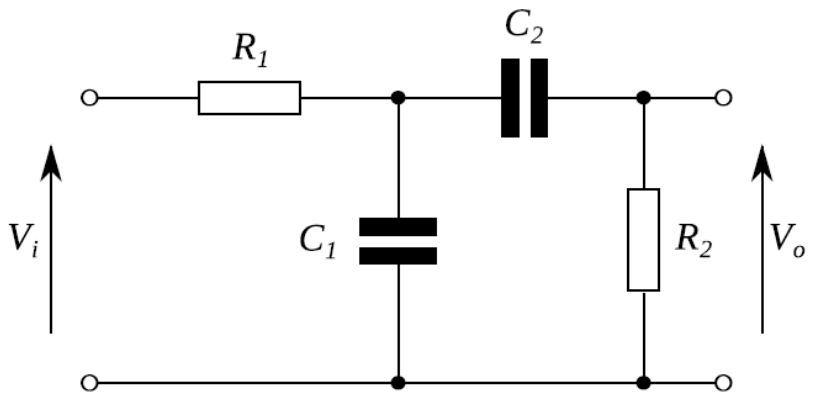
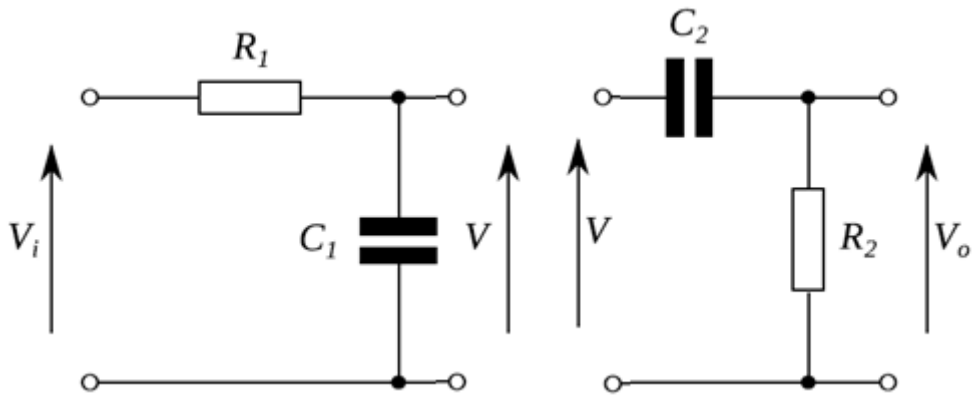
For the circuit shown in Figure 2, show that the transfer function relating output voltage V_o to input voltage V_i is

$$\frac{V_o(s)}{V_i(s)} = \frac{sC_2R_2}{1 + s(C_1R_1 + C_2R_1 + C_2R_2) + s^2C_1C_2R_1R_2}$$



My attempt

The circuit is split up into two separate systems which are cascaded together:



Taking the Laplace transform of each systems transfer function applies that the overall transfer function of the circuit is:

$$\Rightarrow H(s) = H_{1(S)}H_2(s)$$

$$H_1(s) = \frac{\frac{1}{sC_1}}{R_1 + \frac{1}{sC_1}}$$

$$= \frac{1}{sR_1C_1 + 1}$$

$$H_2(s) = \frac{R_2}{R_2 + \frac{1}{sC_2}}$$

$$= \frac{sR_2C_2}{sR_2C_2 + 1}$$

$$\Rightarrow H(s) = \frac{1}{sR_1C_1 + 1} \times \frac{sR_2C_2}{sR_2C_2 + 1}$$

$$= \frac{sR_2C_2}{(sR_1C_1 + 1)(sR_2C_2 + 1)}$$

$$= \frac{sR_2C_2}{s^2R_1C_1R_2C_2 + sR_1C_1 + sR_2C_2 + 1}$$

$$= \frac{sR_2C_2}{s^2R_1C_1R_2C_2 + s(R_1C_1 + R_2C_2) + 1}$$

As you can see I do not get the same answer, my answer looks close but it misses the C_2R_1 terms. I can't figure out why ☹ can you help me please?