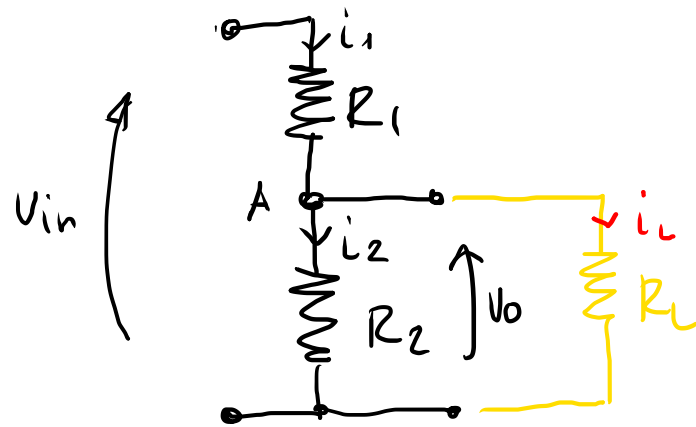


15h. Part. + rule



$$V_{in} = 5V$$

$$V_o = 3V$$

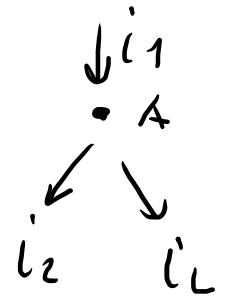
$$i_L = 100 \text{ mA}$$

$$1. \quad i_2 = 10\% \cdot i_L$$

$$2. \quad R_2 \leadsto \text{bleeder res.}$$

$$3. \quad i_1 = i_L + i_2$$

$$4. \quad R_1$$



$$i_2 = 100 \text{ mA} \cdot 10\% = 100 \text{ mA} \cdot 0,1 = 10 \text{ mA}$$

$$R_2 = \frac{V_o}{i_2} = \frac{3V}{10 \text{ mA}} = 300 \Omega \leadsto R_2 = 330 \Omega$$

$$i_2 = \frac{3V}{330 \Omega} = \underline{0,0091 \text{ A}} = 9,1 \text{ mA}$$

$$i_1 = i_2 + i_L = 9,1 + 100 \text{ mA} = 109,1 \text{ mA}$$

$$R_1 = \frac{V_{in} - V_o}{i_1} = \frac{5 - 3}{109,1 \text{ mA}} = \underline{18 \Omega} \quad 1\%$$

$$P_1 = i_1^2 \cdot R_1 = (0,1091)^2 \cdot 18 = 0,214 \text{ W} \leadsto 0,5 \text{ W}$$

$$P_2 = i_2^2 \cdot R_2 = (0,0091)^2 \cdot 330 = \underline{0,027 \text{ W}}$$