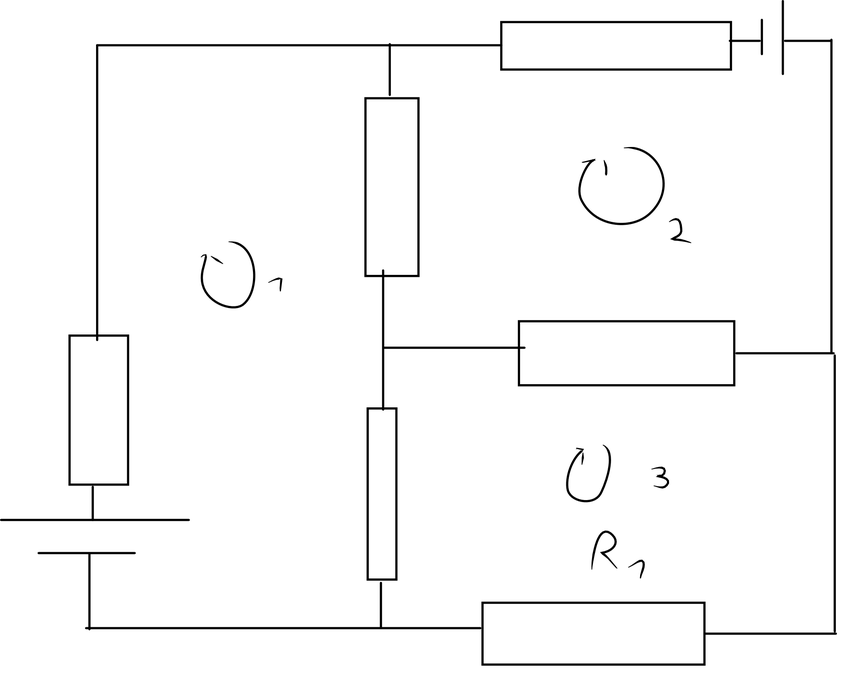
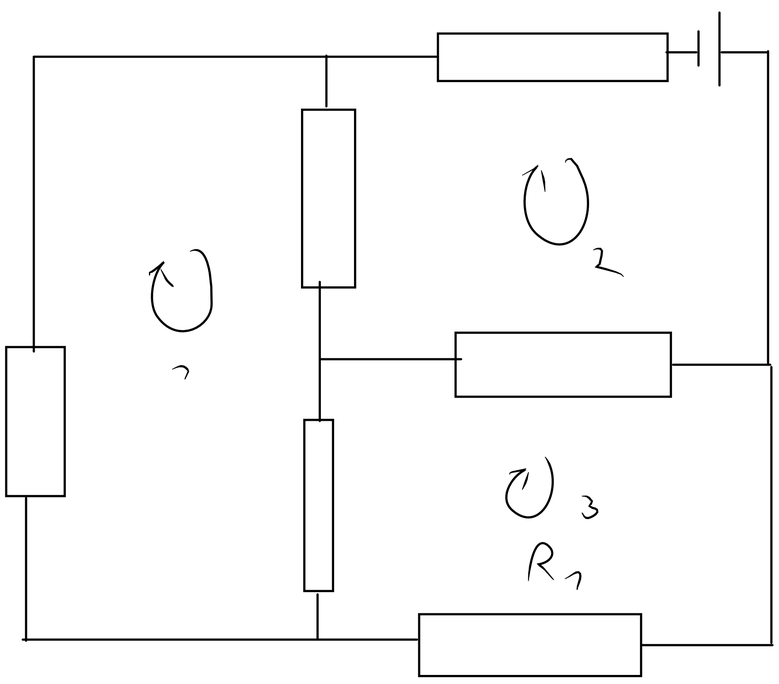


$$\begin{bmatrix} 3R & -R & -R \\ -R & 3R & -R \\ -R & -R & 2R+R_1 \end{bmatrix} \begin{bmatrix} I_1 \\ I_2 \\ I_3 \end{bmatrix} = \begin{bmatrix} \mathcal{E} \\ \mathcal{E} \\ 0 \end{bmatrix}$$

$$\begin{bmatrix} I_1 \\ I_2 \\ I_3 \end{bmatrix} = \frac{1}{8R^3+8R^2R_1} \begin{bmatrix} 5R^2+3RR_1 & 3R^2+RR_1 & 4R^2 \\ 3R^2+RR_1 & 5R^2+3RR_1 & 4R^2 \\ 4R^2 & 4R^2 & 8R^2 \end{bmatrix} \begin{bmatrix} \mathcal{E} \\ \mathcal{E} \\ 0 \end{bmatrix}$$

$$I_3 = \frac{2 \cdot 4R^2 \cdot \mathcal{E}}{8R^2(R+R_1)} = \frac{\mathcal{E}}{R+R_1}$$



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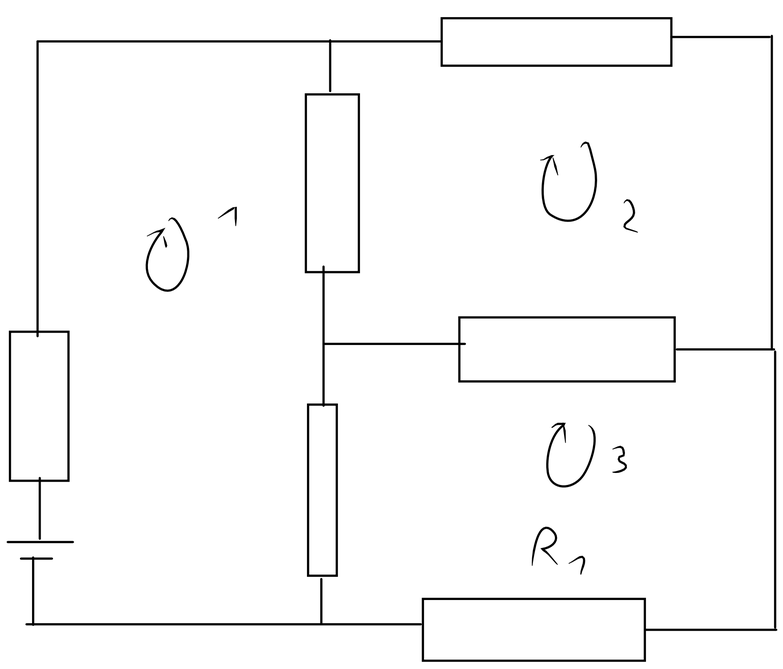
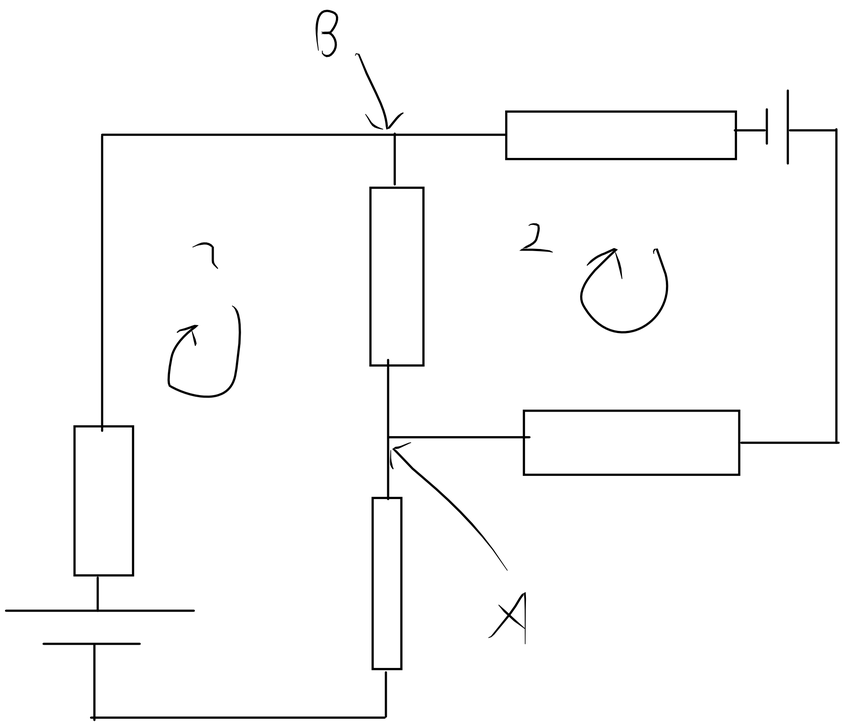
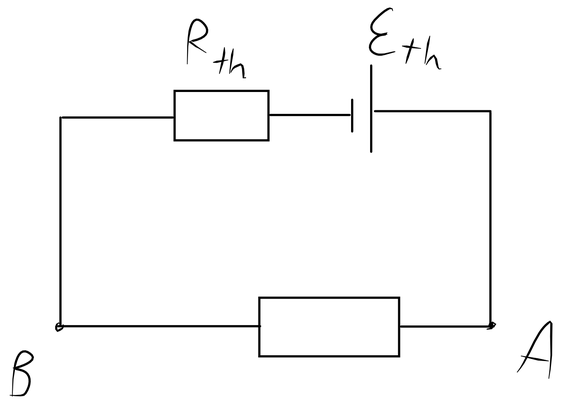
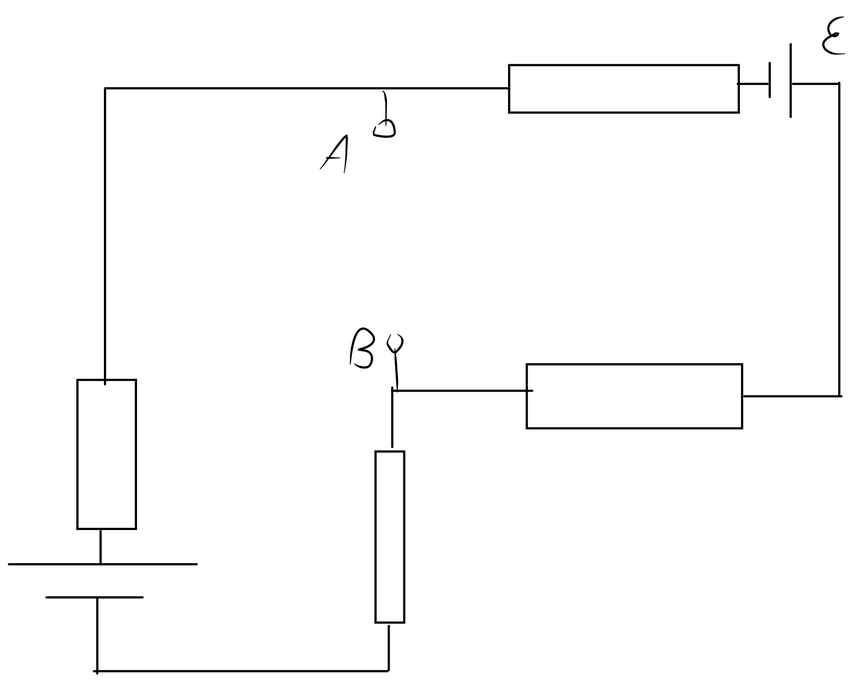


$$\begin{bmatrix} 3R & -R & -R \\ -R & 3R & -R \\ -R & -R & 2R+R_1 \end{bmatrix} \begin{bmatrix} I_1 \\ I_2 \\ I_3 \end{bmatrix} = \begin{bmatrix} \mathcal{E} \\ 0 \\ 0 \end{bmatrix}$$

$$\begin{bmatrix} 3R & -R & -R \\ -R & 3R & -R \\ -R & -R & 2R+R_1 \end{bmatrix} \begin{bmatrix} I_1 \\ I_2 \\ I_3 \end{bmatrix} = \begin{bmatrix} 0 \\ \mathcal{E} \\ 0 \end{bmatrix}$$







$$R_{th} = \frac{2R \cdot 2R}{2R+2R} = R$$

$$I \cdot 4R = 2\mathcal{E} \Rightarrow 2IR = \mathcal{E}$$

$$U_{AB} = \mathcal{E}_{th} = -IR + \mathcal{E} - IR$$

$$= \mathcal{E} - 2IR = 0 \text{ (faltyczne)}$$