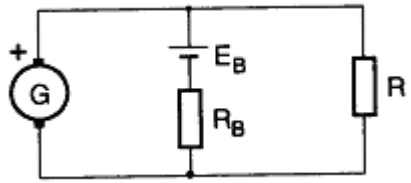
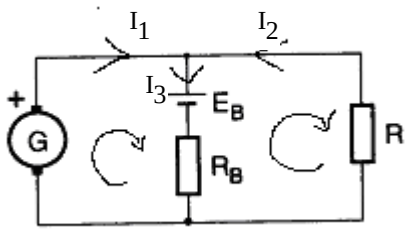
opgave 2.42



$E_{generator} := 27 \cdot V$ $E_{batteri} := 24 \cdot V$

$R_{generator} := 1 \cdot \Omega$ $R_{batteri} := 2 \cdot \Omega$ $R_{belastning} := 8 \cdot \Omega$



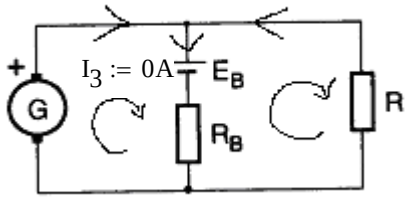
$I_3 = I_1 + I_2$

$E_{generator} - E_{batteri} = I_1 \cdot R_{generator} + I_3 \cdot R_{batteri}$

$E_{batteri} = -I_3 \cdot R_{batteri} - I_2 \cdot R_{belastning}$

$$\begin{pmatrix} I_3 = I_1 + I_2 \\ E_{generator} - E_{batteri} = I_1 \cdot R_{generator} + I_3 \cdot R_{batteri} \\ E_{batteri} = -I_3 \cdot R_{batteri} - I_2 \cdot R_{belastning} \end{pmatrix} \text{solve}, I_1, I_2, I_3 \rightarrow \begin{pmatrix} \frac{3 \cdot V}{\Omega} & -\frac{3 \cdot V}{\Omega} & 0 \end{pmatrix} = (3 \quad -3 \quad 0)\ \text{A}$$

$I_1 := 3A$ $I_2 := -3A$



$U_{klg} := E_{generator} - I_1 \cdot R_{generator} = 24\,V$

$U_{klb} := E_{batteri} - I_3 \cdot R_{batter} \rightarrow 24 \cdot V$

$U_{kl} := -I_2 \cdot R_{belastning} \rightarrow 24 \cdot A \cdot \Omega$