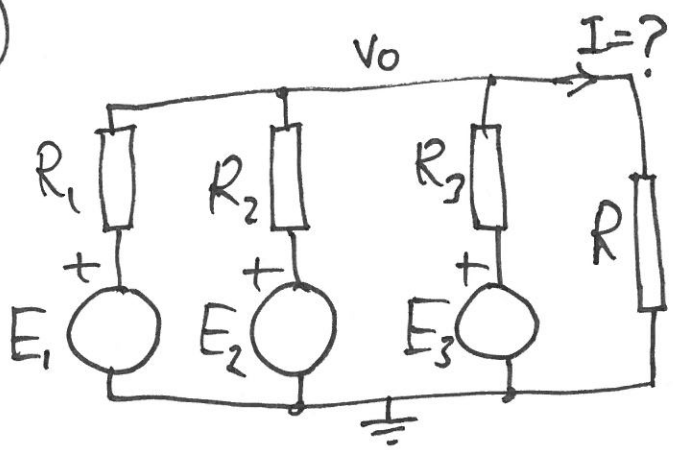
1-23)



$E_1 = 10\,V$

$E_2 = 11{,}1\,V$

$E_3 = 12\,V$

$R_1 = 31\,k\Omega$

$R_2 = 41\,k\Omega$

$R_3 = 56\,k\Omega$

$R = 60\,k\Omega$

Løsning m. nodanalys:

$$\frac{V_0 - E_1}{R_1} + \frac{V_0 - E_2}{R_2} + \frac{V_0 - E_3}{R_3} + \frac{V_0 - 0}{R} = 0$$

$$\Rightarrow \left(\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \frac{1}{R}\right) \cdot V_0 = \frac{E_1}{R_1} + \frac{E_2}{R_2} + \frac{E_3}{R_3}$$

$$\Rightarrow V_0 = \frac{\frac{E_1}{R_1} + \frac{E_2}{R_2} + \frac{E_3}{R_3}}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \frac{1}{R}} = 8.86\,V$$

$$I = \frac{V - 0}{R} = 1{,}48 \cdot 10^{-4}\,A$$

$$\boxed{I = 0.15\,mA}$$