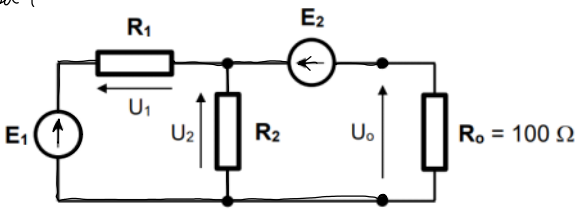
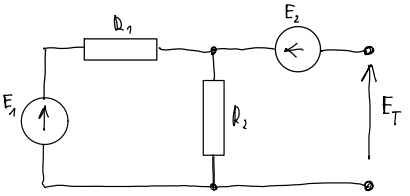
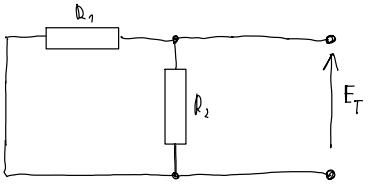
Laby 3

poniedziałek, 18 grudnia 2023 21:37

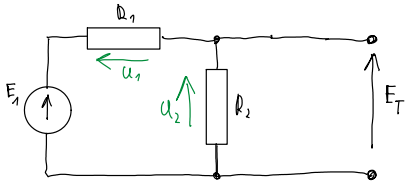
Zad 1

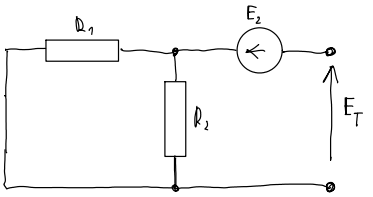


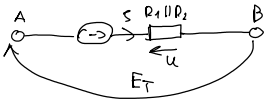




$R_w = \frac{R_1 \cdot R_2}{R_1 + R_2}$







$I = 0, \quad U = 0$

$E_2 + E_{T_2} = 0$

$E_{T_2} = -E_2$

$E_T = U_2$

$U_2 = E_1 \cdot \frac{R_2}{R_1 + R_2}$

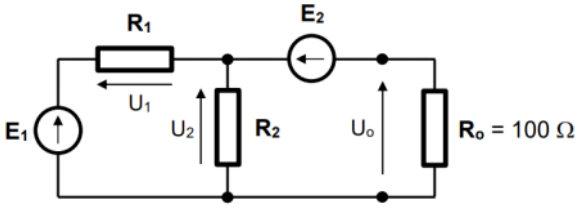
$E_{T_1} = E_1 \cdot \frac{R_2}{R_1 + R_2}$

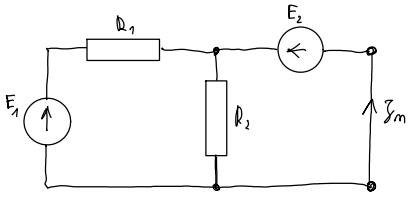
$E_T = E_1 \cdot \frac{R_2}{R_1 + R_2} - E_2 = 59\,V \cdot \frac{5800\,\Omega}{8850\,\Omega} - 29{,}5\,V = \frac{59}{6}\,V$

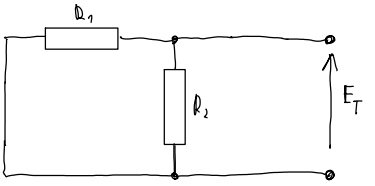
$R_w = \frac{R_1 \cdot R_2}{R_1 + R_2} = \frac{5800 \cdot 2350}{5800 + 2350} = 1966\frac{2}{3}\,\Omega$

$U_0 = E_T \cdot \frac{R_0}{R_w + R_0} = \frac{59}{6}\,V \cdot \frac{100}{2066\frac{2}{3}} = \frac{58}{129}\,V$

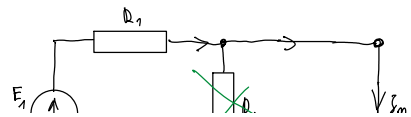
Zad 2

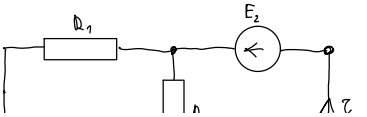


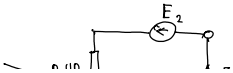


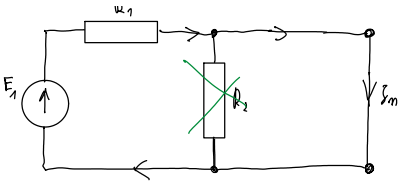


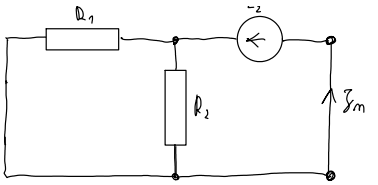
$R_w = \frac{R_1 \cdot R_2}{R_1 + R_2}$

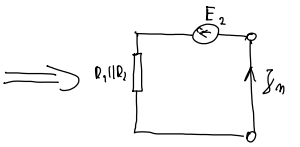












$$I_{m_1} = \frac{E_1}{R_1}$$

$$R_w = \frac{R_1 \cdot R_2}{R_1 + R_2} = 1866\frac{2}{3}\ \Omega$$

$$I_m = \frac{R_1 + R_2}{R_1 \cdot R_2} \cdot E_2 - \frac{1}{R_1} \cdot E_1 = -0{,}005\,A = -5\,mA$$

$$I_0 = I_m \cdot \frac{R_w}{R_0 + R_w} = 5\,mA \cdot \frac{1866\frac{2}{3}}{2066\frac{2}{3}} = \frac{295}{62}\,mA$$

$$U_0 = I_m \cdot \frac{R_w}{R_0 + R_w} \cdot R_0 = \frac{14750}{31}\,mV$$

$$R_1 \| R_2 = \frac{R_1 \cdot R_2}{R_1 + R_2}$$

$$I_{m_2} = \frac{R_1 + R_2}{R_1 \cdot R_2} \cdot E_2$$