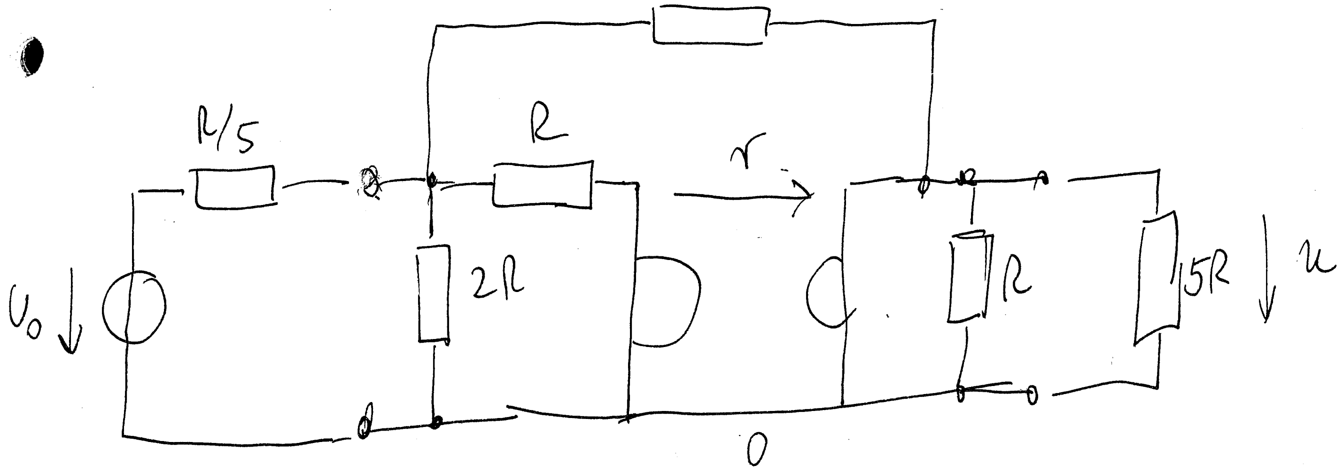
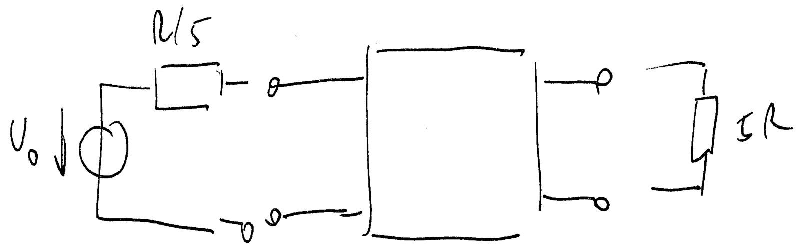
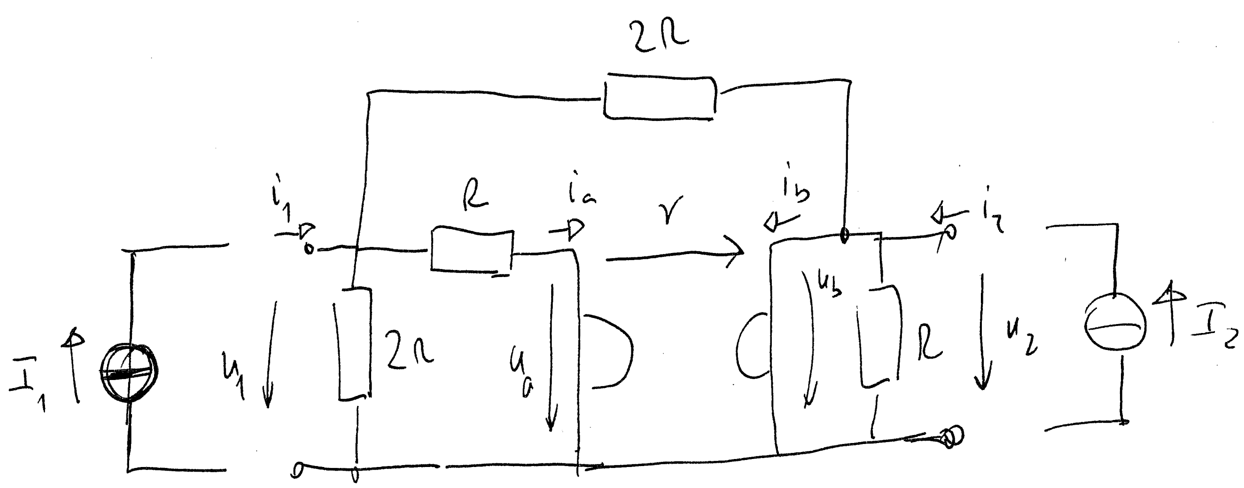
2024.03.20





R = 50 Ω

r = 40 Ω



$\underline{\underline{R}} = ?$ források $\begin{pmatrix} i_1 \\ i_2 \end{pmatrix}$

ismeretlenek $u_1, u_2, u_a, u_b, i_a, i_b \rightarrow 6$ db

1.) $-I_1 + \cancel{i}\frac{u_1-u_a}{R} + \frac{u_1}{2R} + \frac{u_1-u_2}{2R} = 0$

2.) $i_a + \frac{u_a-u_1}{R} = 0$

3.) $\frac{u_2}{R} - i_2 + i_b + \frac{u_2-u_1}{2R} = 0$

4.) $u_a = -r \cdot i_b$

5.) $u_b = r \cdot i_a$ } kar.

6.) $u_b = u_2$

[illegible]:

$$u_1\left(\frac{1}{R}+\frac{1}{2R}+\frac{1}{2R}\right)-\frac{1}{2R}u_2-\frac{1}{R}u_a = I_1$$

$$-\frac{1}{R}u_1+\frac{1}{R}u_a+i_a=0$$

$$-\frac{1}{2R}u_1+u_2\left(\frac{1}{2R}+\frac{1}{R}\right)+i_b = I_2$$

$$u_a+r\,i_b=0 \qquad u_b-r\,i_a=0 \qquad u_2-u_b=0$$

mátrixos alakban

$$\begin{array}{cccccc} u_1 & u_2 & u_a & i_a & u_b & i_b \end{array}$$

$$\begin{pmatrix} 2/R & -1/2R & -1/R & \cdot & \cdot & \cdot \\ -1/R & \cdot & 1/R & 1 & \cdot & \cdot \\ -1/2R & 3/2R & \cdot & \cdot & \cdot & 1 \\ \cdot & \cdot & 1 & \cdot & \cdot & r \\ \cdot & \cdot & \cdot & -r & 1 & \cdot \\ \cdot & 1 & \cdot & \cdot & -1 & \cdot \end{pmatrix} \begin{pmatrix} u_1 \\ u_2 \\ u_a \\ i_a \\ u_b \\ i_b \end{pmatrix} = \begin{pmatrix} 1 & \cdot \\ \cdot & \cdot \\ \cdot & 1 \\ \cdot & \cdot \\ \cdot & \cdot \\ \cdot & \cdot \end{pmatrix} \begin{pmatrix} i_1 \\ i_2 \end{pmatrix}$$