U[V]	R_1 [Ω]	R_2 [Ω]	R_3 [Ω]	R_4 [Ω]	R_5 [Ω]	R_6 [Ω]
180	250	315	615	180	460	120

Vyřešíme za využití Theveninovy věty.

$$R_{23} = R_2 + R_3 = 315 + 615 = 930\Omega$$

$$R_{123} = \frac{R_1 \times R_{23}}{R_1 + R_{23}} = \frac{180 \times 930}{180 + 930} = 150,810810810 81\Omega$$

$$R_{1234} = R_{123} + R_4 = 150,81081081081 + 180 = 330,810810810 81\Omega$$

$$R_i = \frac{R_5 \times R_{1234}}{R_5 + R_{1234}} = \frac{460 \times 330,81081081081}{460 + 330,81081081081} = 192.42652084757 32\Omega$$

Vypočítáme I_B metodou smyčkových proudů sestavením matice.

$$\begin{pmatrix} R_1 + R_2 + R_3 & -R_2 - R_3 \\ -R_2 - R_3 & R_2 + R_3 + R_4 + R_5 + R_6 \end{pmatrix} \times \begin{pmatrix} I_A \\ I_B \end{pmatrix} = \begin{pmatrix} U \\ 0 \end{pmatrix}$$

$$\begin{pmatrix} 1180 & -930 \\ -930 & 1690 \end{pmatrix} \times \begin{pmatrix} I_A \\ I_B \end{pmatrix} = \begin{pmatrix} 180 \\ 0 \end{pmatrix}$$

Nyní vypočteme determinant matice.

$$M = \begin{vmatrix} 1180 & -930 \\ -930 & 1690 \end{vmatrix} = 1129300$$

$$M_{I_B} = \begin{vmatrix} 1180 & 180 \\ -930 & 0 \end{vmatrix} = 167400$$

Nyní použijeme spočtené determinanty k výpočtu I_B:

$$I_B = \frac{M_{I_B}}{M} = \frac{167400}{1129300} = \frac{1674}{11293} A$$

$$U_i = U_{R_5} = I_B \cdot R_5 = \frac{1674}{11293} \cdot 450 = \frac{753300}{11293} = 66.70503851943683V$$

$$I_{R_6} = \frac{U_i}{R_i + R_6} = \frac{66.70503851943683}{192.4265208475732 + 120} = 0.21350632570652A = 213.50632570652mA$$

$$U_{R_6} = I_{R_6} \cdot R_6 = 0.21350632570652 \cdot 120 = \mathbf{25.6207590847824V}$$