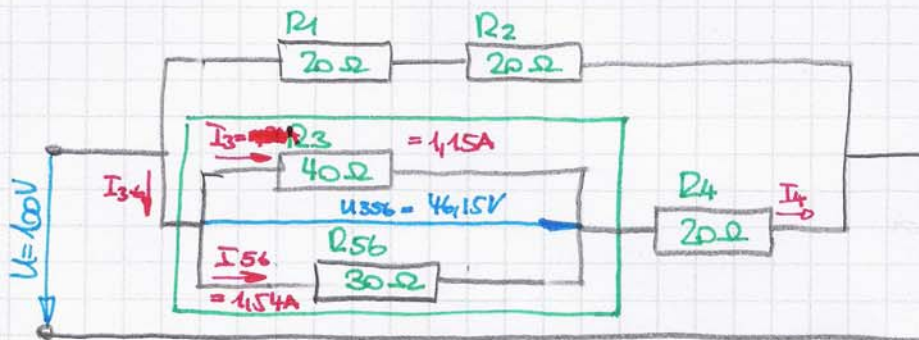


$$R_{56} = R_5 + R_6 \quad \textcircled{I}$$

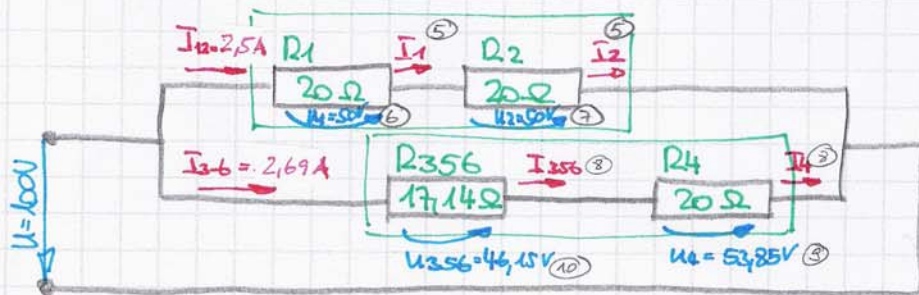
$$= (10 + 20 \Omega) = \underline{30 \Omega}$$



$$R_{356} = \frac{R_3 \cdot R_{56}}{R_3 + R_{56}} \quad \textcircled{II}$$

$$= \frac{40 \cdot 30 \Omega^2}{(40 + 30) \Omega}$$

$$= \underline{17,14 \Omega}$$

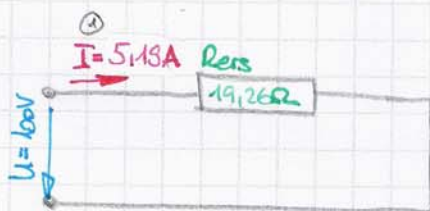
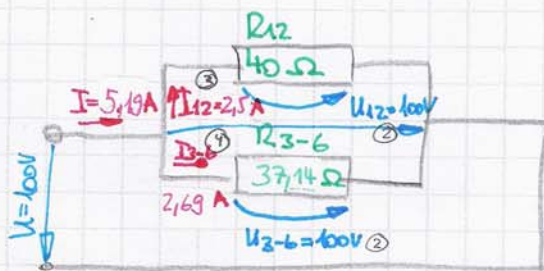


$$R_{12} = R_1 + R_2 = (20 + 20) \Omega = \underline{40 \Omega}$$

(Serie)

$$R_{3-6} = R_{356} + R_4 = 17,14 \Omega + 20 \Omega$$

$$= \underline{37,14 \Omega}$$



$$R_{ers} = \frac{R_{12} \cdot R_{3-6}}{R_{12} + R_{3-6}}$$

$$= \frac{40 \Omega \cdot 37,14 \Omega}{40 \Omega + 37,14 \Omega} = \underline{19,26 \Omega}$$



$$\textcircled{1} \underline{I} = \frac{U}{R} = \frac{100V}{19,26\Omega} = \underline{5,19A}$$

$$\frac{U}{R \cdot I}$$

	R(Ω)	I(A)	U(V)
1	20	2,5 <sup>⑤</sup>	50 <sup>⑥</sup>
2	20	2,5 <sup>⑤</sup>	50 <sup>⑦</sup>
3	40	1,15 <sup>⑫</sup>	46,15 <sup>⑪</sup>
4	20	2,69 <sup>⑧</sup>	53,85 <sup>⑩</sup>
5	10	1,54 <sup>⑬</sup>	15,4 <sup>⑮</sup>
6	20	1,54 <sup>⑬</sup>	30,8 <sup>⑯</sup>
ges	19,26	5,19 <sup>①</sup>	100

$$\textcircled{2} U_{12} = U_{3-6} = U = \underline{100V} \quad \text{Maschensatz } \textcircled{II}$$

$$\textcircled{3} \underline{I_{12}} = \frac{U_{12}}{R_{12}} = \frac{100V}{40\Omega} = \underline{2,5A}$$

$$\textcircled{4} \underline{I_{3-6}} = \frac{U_{3-6}}{R_{3-6}} = \frac{100V}{37,14\Omega} = \underline{2,69A}$$

$$\textcircled{5} \underline{I_{12}} = \underline{I_1} = \underline{I_2} = \underline{2,5A}$$

$$\textcircled{6} \underline{U_1} = R_1 \cdot I_1 = 20\Omega \cdot 2,5A = \underline{50V}$$

$$\textcircled{7} \underline{U_2} = R_2 \cdot I_2 = 20\Omega \cdot 2,5A = \underline{50V}$$

Kontrolle:  $U_1 + U_2 = U_{12} = (50 + 50)V = 100V \checkmark$

$$\textcircled{8} \underline{I_{356}} = \underline{I_4} = \underline{I_{3-6}} = \underline{2,69A}$$

$$\textcircled{9} \underline{U_4} = R_4 \cdot I_4 = 20\Omega \cdot 2,69A = \underline{53,85V}$$

$$\textcircled{10} \underline{U_{356}} = R_{356} \cdot I_{356} = 17,14\Omega \cdot 2,69A = \underline{46,15V}$$

Kontrolle  $U_4 + U_{356} = U_{3-6}$   
 $53,85 + 46,15 = 100V \checkmark$

$$\textcircled{11} U_{356} = \underline{U_3} = \underline{U_{56}} = \underline{46,15V} \quad \textcircled{III}$$

$$\textcircled{12} \underline{I_3} = \frac{U_3}{R_3} = \frac{46,15V}{40\Omega} = \underline{1,15A}$$

$$\textcircled{13} \underline{I_{56}} = \frac{U_{56}}{R_{56}} = \frac{46,15V}{30\Omega} = \underline{1,54A}$$

Kontrolle  $I_3 + I_{56} = I_{356}$

$$1,15A + 1,54A = \underline{2,69A} \checkmark$$

$$\textcircled{14} \underline{I_{56}} = \underline{I_5} = \underline{I_6} = \underline{1,54A} \quad \textcircled{IV}$$

$$\textcircled{15} \underline{U_5} = R_5 \cdot I_5 = 10\Omega \cdot 1,54A = \underline{15,4V}$$

$$\textcircled{16} \underline{U_6} = R_6 \cdot I_6 = 20\Omega \cdot 1,54A = \underline{30,8V}$$

Kontrolle  $U_5 + U_6 = U_{56}$

$$15,4V + 30,8V = 46,2V \checkmark$$

