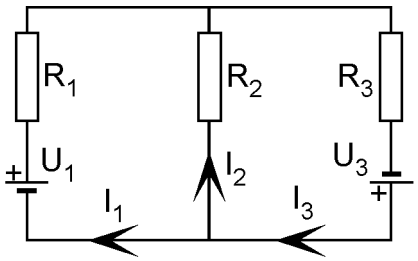
Aufgaben zur Berechnung von Netzwerken

Lie.

Berechnen Sie die Ströme. Benennungen und Richtungen sind vorgegeben.



Figur 1: $U_1 = 4.5$ V, $U_3 = 4.6$ V
$R_1 = 0.80\ \Omega$, $R_2 = 1.3\ \Omega$, $R_3 = 0.70\ \Omega$

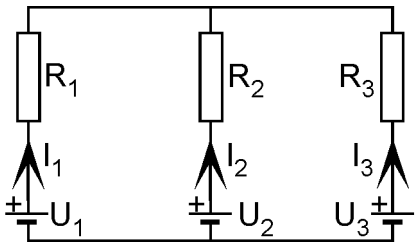
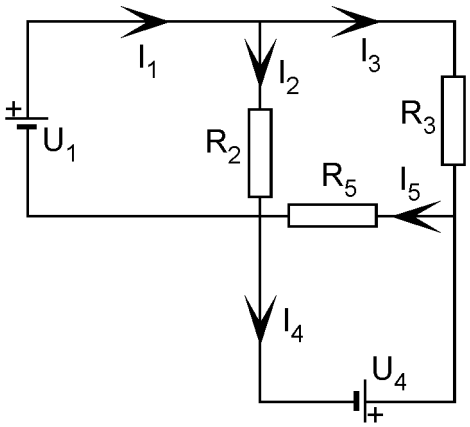
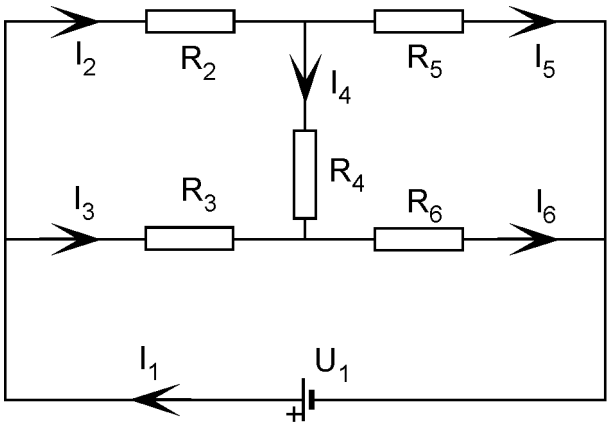


Fig. 2: $U_1 = 1.50$ V, $U_2 = 1.49$ V, $U_3 = 1.48$ V
$R_1 = 0.80\ \Omega$, $R_2 = 1.8\ \Omega$, $R_3 = 5.5\ \Omega$



Figur 3: $U_1 = 12$ V, $U_4 = 9.0$ V
$R_2 = 87\ \Omega$, $R_3 = 78\ \Omega$, $R_5 = 93\ \Omega$



Figur 4: $U_1 = 65$ V, $R_2 = 89\ \Omega$, $R_3 = 123\ \Omega$,
$R_4 = 237\ \Omega$, $R_5 = 97\ \Omega$, $R_6 = 73\ \Omega$

Lösungen:

1) $I_1 = 6.0$ A, $I_2 = 0.21$ A, $I_3 = 6.2$ A
2) $I_1 = 5.8$ mA, $I_2 = -3.0$ mA, $I_3 = -2.8$ mA
3) $I_1 = 0.18$ A, $I_2 = 0.14$ A, $I_3 = 0.038$ A, $I_4 = 0.058$ A, $I_5 = 0.097$ A
4) $I_1 = 0.69$ A, $I_2 = 0.36$ A, $I_3 = 0.32$ A, $I_4 = 0.029$ A, $I_5 = 0.34$ A, $I_6 = 0.35$ A