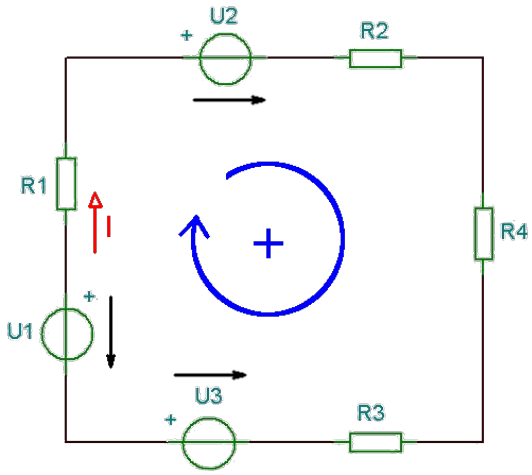
## A csoport

### *1. feladat*




$U_1$=6 V
$U_2$=12 V
$U_3$=3 V
$R_1$=1,2 kΩ = 1200 Ω
$R_3$=500 Ω
$R_3$=3 kΩ = 3000 Ω
$R_4$=10 kΩ = 10000 Ω

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$U_{R4}$= ? [Ω]

$$-U_1+U_2-U_3+I*(R_1+R_2+R_3+R_4)=0$$

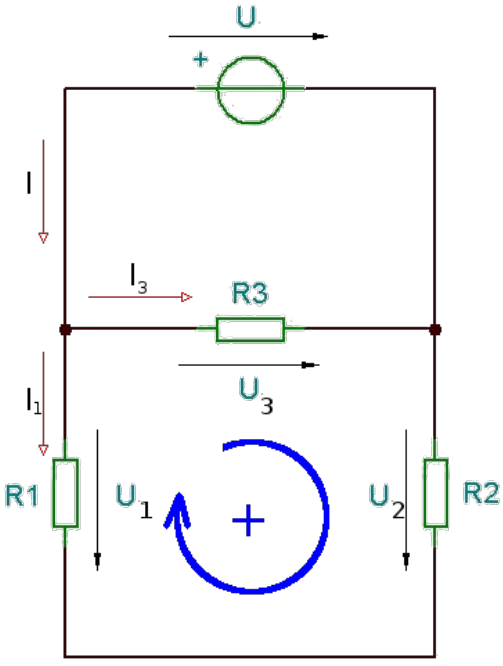
$$-6+12-3+I*(1200+500+3000+10000)=0$$

$$3+I*14700=0$$

$$I=\frac{-3}{14700}=0{,}000204\,A=0{,}204\,mA$$

$$U_{R4}=I*R_4=0{,}000204*10000=2{,}04\,V$$

### *2. feladat*




$R_1$=10 Ω
$R_3$= 40 Ω
U=100 V
$U_1$=25 V

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$R_2$ = ? [Ω]

$$U_3=U=100V$$

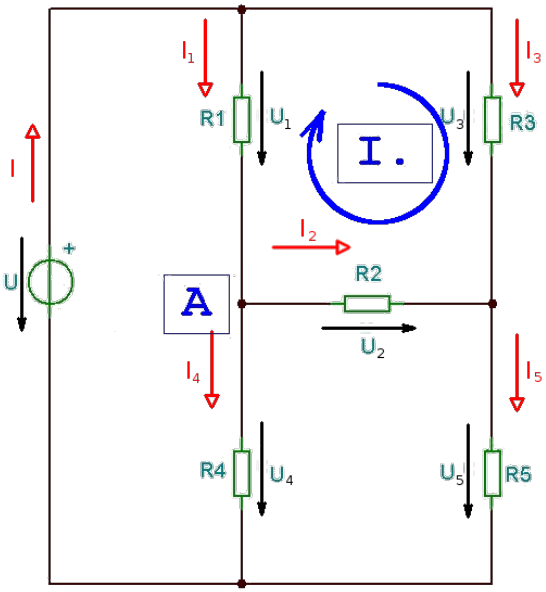
$$I_1=\frac{U_1}{R_1}=\frac{25}{10}=2{,}5\,A$$

$$I_2=I_1=2{,}5\,A$$

$$U_2=U_1-U_3=25-100=-75\,V$$

$$R_2=\frac{U_2}{I_2}=\frac{75}{2{,}5}=30\Omega$$

## *3. feladat*

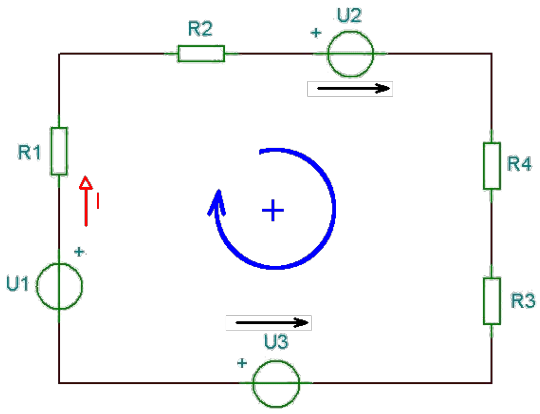



*Huroktörvény* $(I.)$: $U_3+U_2-U_1=0$

*Csomóponti törvény* $(A)$: $I_1=I_2+I_4$

## B csoport

### *1. feladat*




$U_1$=120 V
$U_2$=30V
$U_3$=60 V
$R_1$=$R_2$=$R_3$=$R_4$=1,5 Ω

$U_{R1}$ = ? [V]

$$U_1+U_2-U_3+I*(R_1+R_2+R_3+R_4)=0$$

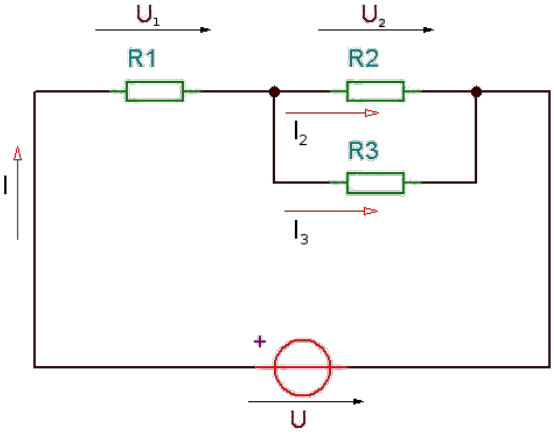
$$120+30-60+I*(1{,}5+1{,}5+1{,}5+1{,}5)=0$$

$$90+I*4{,}5=0$$

$$I=\frac{-90}{4{,}5}=20\,A$$

$U_{R1}=-I*R_1=20*1{,}5=-30\,V$ A feszültség iránya a felvett iránnyal ellentétes.

### *2. feladat*




U=48 V
$U_2$=30 V
I=1,5 A
$R_3$=20 Ω

$R_1$ = ? [Ω], $I_2$ = ? [A]

$$U_1=U-U_2=48-30=18\,V$$

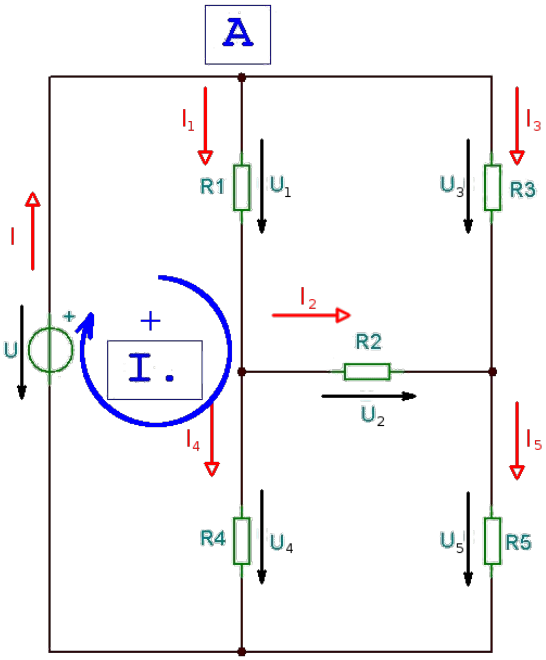
$$R_1=\frac{U_1}{I}=\frac{18}{1{,}5}=12\,V$$

$$U_2=U_3=30\,V$$

$$I_3=\frac{U_3}{R_3}=\frac{18}{20}=0{,}9\,A$$

$$I_2=I-I_3=1{,}5-0{,}9=0{,}6\,A$$

### 3. feladat




*Huroktörvény* $(I.)$: $U_1+U_4-U=0$

*Csomóponti törvény* $(A)$: $I=I_1+I_3$