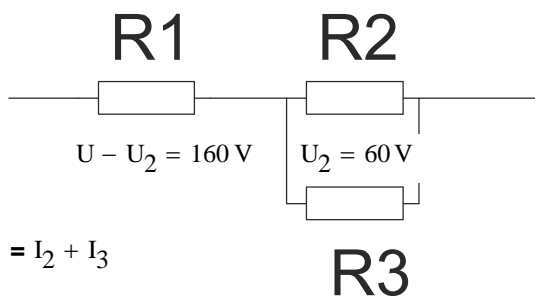
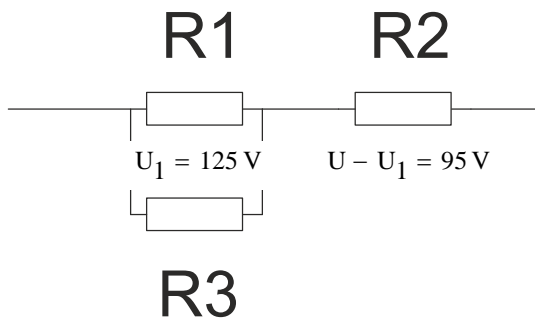


2.25 To resistanser  $R_1$  og  $R_2$  er forbundet i serie, og serieforbindelsen er tilsluttet 220 V.

Forbindes en resistans  $R_3$  på 20,0 k $\Omega$  parallelt over  $R_1$  bliver spændingen over denne parallelforbindelse 125 V. Forbindes i stedet  $R_3$  over  $R_2$  bliver spændingen over denne parallelforbindelse 60 V. Beregn  $R_1$  og  $R_2$ .

$$U := 220\text{V} \quad U_1 := 125\text{V} \quad U_2 := 60\text{V} \quad R_3 := 20\text{k}\Omega$$



$$I_1 = I_2 + I_3$$

$$\frac{U_1}{R_1} + \frac{U_1}{R_3} = \frac{U - U_1}{R_2}$$

$$\frac{125\text{V}}{R_1} + \frac{125\text{V}}{20\text{k}\Omega} = \frac{220\text{V} - 125\text{V}}{R_2}$$

$$\frac{U_2}{R_2} + \frac{U_2}{R_3} = \frac{U - U_2}{R_1}$$

$$\frac{60\text{V}}{R_2} + \frac{60\text{V}}{20\text{k}\Omega} = \frac{220\text{V} - 60\text{V}}{R_1}$$

$$\left( \begin{array}{l} \frac{125\text{V}}{R_1} + \frac{125\text{V}}{20\text{k}\Omega} = \frac{220\text{V} - 125\text{V}}{R_2} \\ \frac{60\text{V}}{R_2} + \frac{60\text{V}}{20\text{k}\Omega} = \frac{220\text{V} - 60\text{V}}{R_1} \end{array} \right) = \left( \frac{35\cdot\text{k}\Omega}{3} \quad \frac{28\cdot\text{k}\Omega}{5} \right) = (11.667 \quad 5.6) \cdot \text{k}\Omega$$