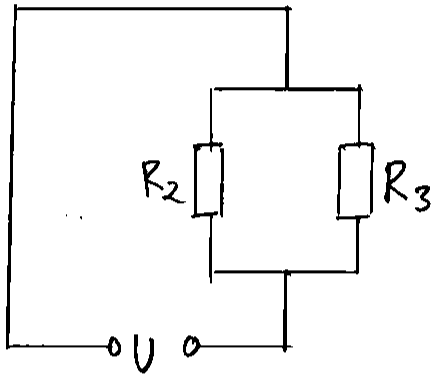
Musteraufgabe 6

3. Geg.: $R_2 = 176{,}3\,\Omega$
$P = 1100\,W$
$U = 230\,V$

Schaltstufe 5:



$$R_{23} = \frac{U^2}{P} = \frac{230^2\,V^2}{1100\,W} = 48{,}09\,\Omega$$

$$\frac{1}{R_{23}} = \frac{1}{R_2} + \frac{1}{R_3}$$

$$\frac{1}{48{,}09\,\Omega} = \frac{1}{176{,}3\,\Omega} + \frac{1}{R_3}$$

$$\frac{1}{R_3} = \frac{1}{48{,}09\,\Omega} - \frac{1}{176{,}3\,\Omega} = 0{,}01512\,\frac{1}{\Omega}$$

$$\Rightarrow \underline{\underline{R_3 = 66{,}12\,\Omega}}$$