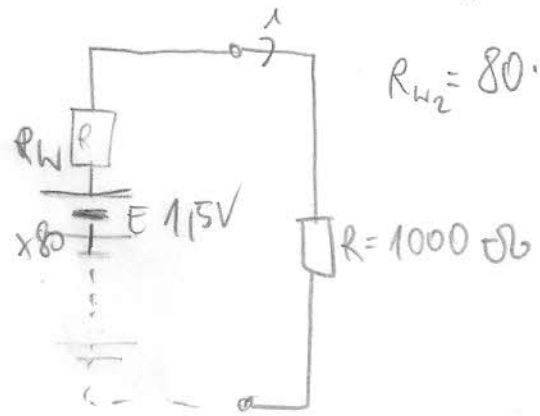
15.18 Dane:

$R_w = 0{,}5\,\Omega$ $E = 1{,}5\,V$ $R = 1000\,\Omega$



$R_{w_2} = 80 \cdot 0{,}5\,\Omega$ $E_z = 80 \cdot 1{,}5\,V$

$$i = \frac{E_z}{R_{w_2} + R} = \frac{80 \cdot 1{,}5}{80 \cdot 0{,}5 + 1000} = \frac{120}{1040} \approx 0{,}12\,A$$

$i \approx 0{,}12\,A$ ✓

15.19

Dane: $i = 2{,}5\,A$; $U = 220\,V$ $t = 6\,h$ $P = ?$ $E = ?$

$P = U \cdot i = 2{,}5 \cdot 220 = 550\,W$

$P = 550\,W$ ✓ $E = 0{,}55 \cdot 6 = 3{,}3\,kWh$ ✓

$P = 0{,}55\,kW$ ✓ $E = 3{,}3\,kWh$ ✓

15.20

1) $P_1 = 40\,W$ 2) $P_2 = 100\,W$ $U = 220\,V$ $P = U \cdot i$ $U = R \cdot i$ $P = i^2 \cdot R$

$$i_1 = \frac{P_1}{U} = \frac{40}{220} \approx 0{,}18\,A$$

$i_1 = 0{,}18\,A$ ✓

$$R_1 = \frac{P_1}{i_1^2} = \frac{40}{(0{,}18)^2} = 1234{,}6\,\Omega$$

$R_1 = 1234{,}6\,\Omega$ ✓

$$i_2 = \frac{P_2}{U} = \frac{100}{220} \approx 0{,}45\,A$$

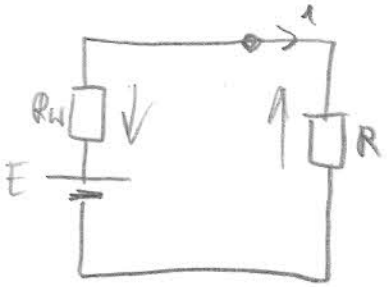
$i_2 = 0{,}45\,A$ ✓

$$R_2 = \frac{P_2}{i_2^2} = \frac{100}{(0{,}45)^2} \approx 494\,\Omega$$

$R_2 = 494\,\Omega$ ✓

15.21

Dane: $E = 1{,}08\,V$ $R_w = 2\,\Omega$ $R_0 = 8\,\Omega$ $t = 1\,s$



$$i = \frac{E}{R_w + R_0} = \frac{1{,}08}{2+8} = \frac{1{,}08}{10} = 0{,}108\,[A]$$

$E = i^2 \cdot R_0 \cdot t = 0{,}108 \cdot 8 \cdot 1 = 0{,}864\,J$

$E = 0{,}1417\,J$ ✓ $R = R_w + R_0$