

$$\textcircled{1} \quad Q = 30 \text{ C} \quad U = \frac{W}{Q}$$

$$\frac{W = 900 \text{ J}}{U = ?} \quad U = \frac{900 \text{ J}}{30 \text{ C}}$$

$$\underline{U = 30 \text{ V}}$$

$$\textcircled{2} \quad U = 6 \text{ V} \quad U = \frac{W}{Q}$$

$$\frac{W = 3600 \text{ J}}{Q = ?} \quad Q = \frac{W}{U}$$

$$Q = \frac{3600 \text{ J}}{6 \text{ V}}$$

$$\underline{Q = 600 \text{ C}}$$

$$\textcircled{3} \quad U = 220 \text{ V} \quad U = \frac{W}{Q}$$

$$\frac{Q = 3 \text{ C}}{W = ?} \quad W = U \cdot Q$$

$$W = 220 \text{ V} \cdot 3 \text{ C}$$

$$\underline{W = 660 \text{ J}}$$

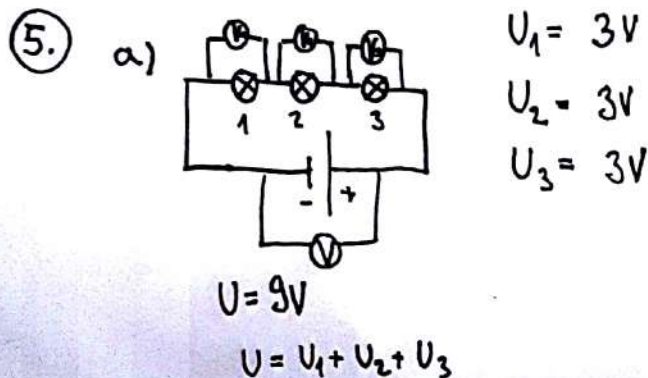
$$\textcircled{4} \quad U = 4.5 \text{ V} \quad W = I \cdot t \cdot U$$

$$I = 0.3 \text{ A} \quad t = \frac{W}{I \cdot U}$$

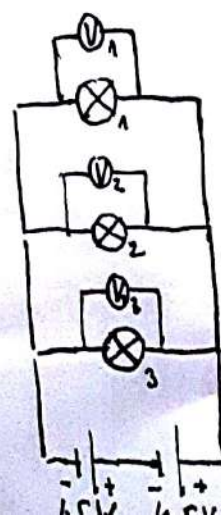
$$\frac{W = 0.0135 \text{ kJ} \Rightarrow 13.5 \text{ J}}{t = ?} \quad t = \frac{13.5}{0.3 \cdot 4.5}$$

$$t = \frac{13.5}{1.35}$$

$$\underline{t = 10 \text{ s}}$$



b)



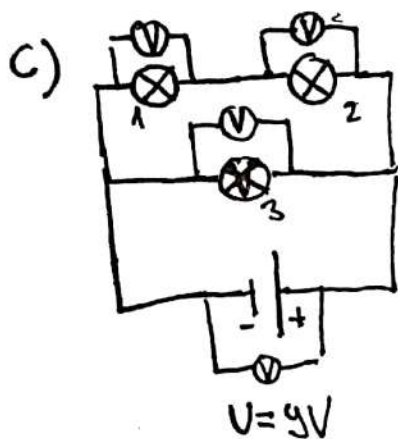
$$U_1 = 9 \text{ V}$$

$$U_2 = 9 \text{ V}$$

$$U_3 = 9 \text{ V}$$

$$U = U_1 = U_2 = U_3$$

$$U = 9 \text{ V}$$



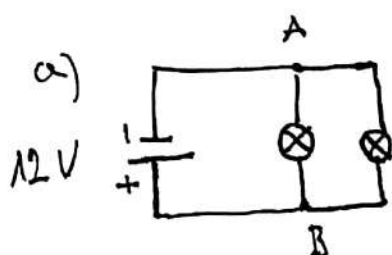
$$U_1 = 4.5V$$

$$U_2 = 4.5V$$

$$U_3 = 9V$$

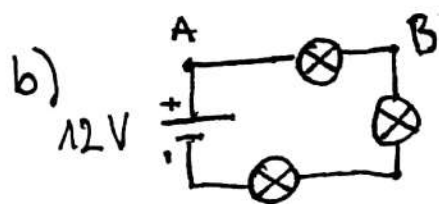
$$U = U_3 = U_1 + U_2$$

6.



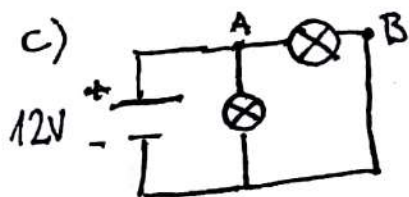
Napon između A i B: 12V

$$U_{AB} = 12V$$



Napon između A i B: 4V

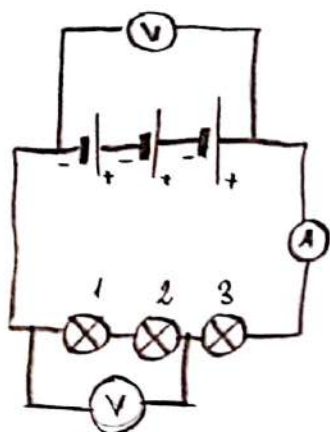
$$U_{AB} = 12V : 3 = 4V$$



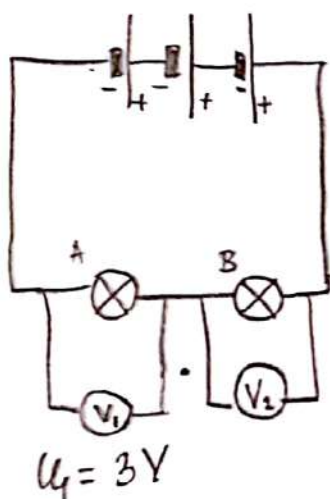
Napon između A i B: 12V

$$U_{AB} = 12V$$

7.



8.



a) $U_2 = 3V$

b) $U = 9V$

$Q = 1C$

$W = ?$

$U = \frac{W}{Q}$

$W = U \cdot Q$

$W = 9V \cdot 1C$

$W = 9J$

c) $U = 3V$

$Q = 1C$

$W = ?$

$U = \frac{W}{Q}$

$W = U \cdot Q$

$W = 3V \cdot 1C$

$W = 3J$

$$\textcircled{9} \quad I = 60 \text{ A}$$

$$U = 230 \text{ V}$$

$$P = ?$$

$$P = U \cdot I$$

$$P = 230 \text{ V} \cdot 60 \text{ A}$$

$$P = 13800 \text{ W}$$

$$P = \boxed{13.8 \text{ kW}}$$

$$\textcircled{10} \quad t = 8 \text{ h} = 28800 \text{ s}$$

$$U = 220 \text{ V}$$

$$I = 5.5 \text{ A}$$

$$W = ?$$

$$W = U \cdot I \cdot t$$

$$W = 220 \text{ V} \cdot 5.5 \text{ A} \cdot 28800 \text{ s}$$

$$W = \boxed{34848000 \text{ J}}$$

$$\textcircled{11} \quad P = 1.4 \text{ kW} = 1400 \text{ W}$$

$$t = 1 \text{ h} = 3600 \text{ s}$$

$$W = ?$$

$$P = \frac{W}{t}$$

$$W = P \cdot t$$

$$W = 1400 \text{ W} \cdot 3600 \text{ s}$$

$$W = \boxed{5040000 \text{ J}}$$

12)

a)

$$P = 1.2 \text{ kW} \rightarrow 1200 \text{ W}$$

$$U = 220 \text{ V}$$

$$I = ?$$

$$P = U \cdot I$$

$$1200 \text{ W} = 220 \text{ V} \cdot I$$

$$I = 1200 \text{ W} : 220 \text{ V}$$

$$I = \boxed{5.45 \text{ A}}$$

$$b) t = 4 \text{ h} = 14400 \text{ s}$$

$$P = 1.2 \text{ kW} = 1200 \text{ W}$$

$$W = \Delta E = ?$$

$$\Delta E = P \cdot t$$

$$\Delta E = 1200 \text{ W} \cdot 14400 \text{ s}$$

$$\Delta E = \boxed{17\,280\,000 \text{ J}}$$

$$(13.) \quad I = 2,5 \text{ A} \quad P = U \cdot I \Rightarrow U = \frac{P}{I}$$

$$\frac{P = 275 \text{ W}}{U = ?} \quad U = \frac{275 \text{ W}}{2,5 \text{ A}}$$

$$U = 110 \text{ V}$$

$$(14.) \quad P = 500 \text{ W} \quad P = \frac{W}{t}$$

$$W = 6 \text{ kJ} = 6000 \text{ J}$$

$$\frac{W = 6000 \text{ J}}{t = ?} \quad t = \frac{W}{P}$$

$$t = \frac{6000 \text{ J}}{500 \text{ W}}$$

$$t = 12 \text{ s}$$

$$(16.) \quad \text{cijena} = 0,4 \frac{\text{kn}}{\text{kWh}} \quad P = \frac{W}{t}$$

$$P = 100 \text{ W} = 0,1 \text{ kW} \quad W = P \cdot t$$

$$t = 14 \text{ d} = 336 \text{ h} \quad W = 0,1 \text{ kW} \cdot 336 \text{ h}$$

$$\frac{W = 33,6 \text{ kWh}}{\text{iznos} = ?}$$

$$\text{iznos} = W \cdot \text{cijena}$$

$$\text{iznos} = 33,6 \text{ kWh} \cdot 0,4 \frac{\text{kn}}{\text{kWh}}$$

$$\text{iznos} = 13,44 \text{ kn}$$

$$40 \text{ ep} = 0,4 \text{ kn}$$

$$(17.) \quad R = 2 \text{ k}\Omega = 2000 \Omega \quad I = \frac{U}{R}$$

$$\frac{U = 220 \text{ V}}{I = ?} \quad I = \frac{220 \text{ V}}{2000 \Omega}$$

$$I = 0,11 \text{ A}$$

$$(18.) \quad R = 50 \Omega \quad I = \frac{U}{R}$$

$$\frac{I = 0,2 \text{ A}}{U = ?} \quad U = I \cdot R$$

$$U = 0,2 \text{ A} \cdot 50 \Omega$$

$$U = 10 \text{ V}$$

$$(19.) \quad R = 40 \Omega \quad I = \frac{U}{R}$$

$$\frac{I = 25 \text{ mA} = 0,025 \text{ A}}{U = ?} \quad U = I \cdot R$$

$$U = 0,025 \text{ A} \cdot 40 \Omega$$

$$U = 1 \text{ V}$$

(20)

$$U = 220 \text{ V} \rightarrow \text{gradska mreža}$$

$$I = 2 \text{ A}$$

$$R = ?$$

$$R = \frac{U}{I}$$

$$R = \frac{220 \text{ V}}{2 \text{ A}}$$

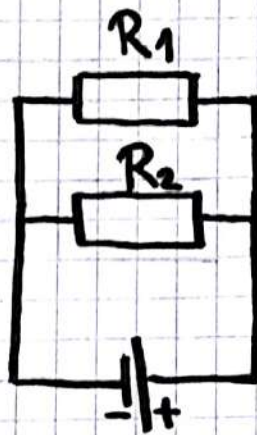
$$R = 110 \, \Omega$$

(21)

$$R_1 = 2 \, \Omega$$

$$R_2 = 8 \, \Omega$$

$$R = ?$$



$$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2}$$

$$\frac{1}{R} = \frac{1}{2 \, \Omega} + \frac{1}{8 \, \Omega}$$

$$\frac{1}{R} = \frac{4}{8 \, \Omega} + \frac{1}{8 \, \Omega}$$

$$\frac{1}{R} \times \frac{8 \, \Omega}{8 \, \Omega}$$

$$5R = 8 \, \Omega$$

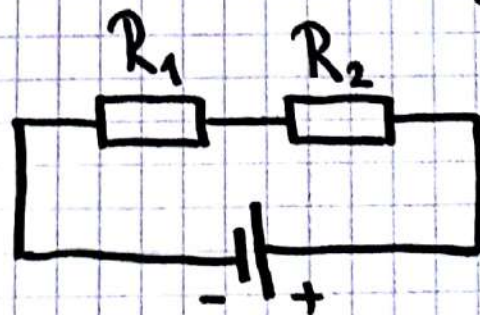
$$R = \frac{8}{5} \, \Omega = 1,6 \, \Omega$$

(22)

$$R_1 = 7 \, \Omega$$

$$R_2 = 5 \, \Omega$$

$$R = ?$$

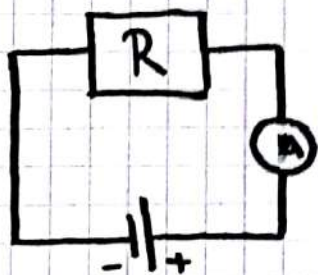


$$R = R_1 + R_2$$

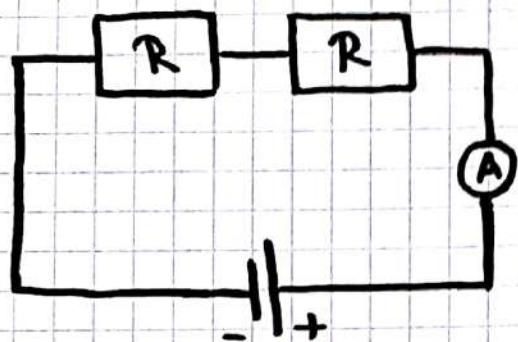
$$R = 7 + 5$$

$$R = 12 \, \Omega$$

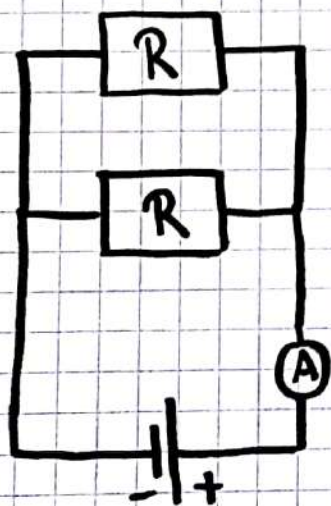
23.



$$\Rightarrow R = 2 \Omega$$



$$\Rightarrow R = 2 + 2 = 4 \Omega$$



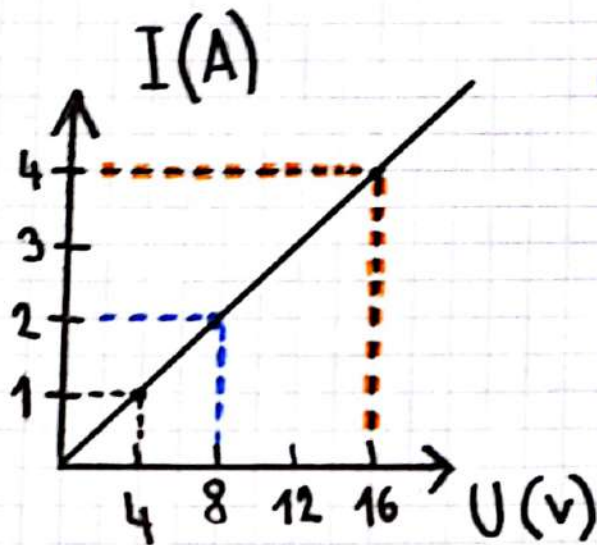
$$\Rightarrow \frac{1}{R} = \frac{1}{2\Omega} + \frac{1}{2\Omega}$$

$$\Rightarrow \frac{1}{R} = \frac{2}{2\Omega} \Rightarrow R = \frac{2\Omega}{2}$$

$$R = 1 \Omega$$

Najveća struja je u paralelnom spoju, jer je ukupni otpor najmanji. Najmanja struja je u serijskom spoju jer je ukupni otpor najveći.

24.



a) Struja je
2 A u
krugu kada je
spojena na napon
od 8 V.

b)

$$\begin{array}{l} U = 4 \text{ V} \\ I = 1 \text{ A} \\ \hline R = ? \end{array}$$

$$R = \frac{U}{I}$$
$$R = \frac{4 \text{ V}}{1 \text{ A}}$$
$$R = 4 \Omega$$

b) Struja bi bila veličine 4 A,
kada bi krug
spojili na napon od 16 V.

(25.)

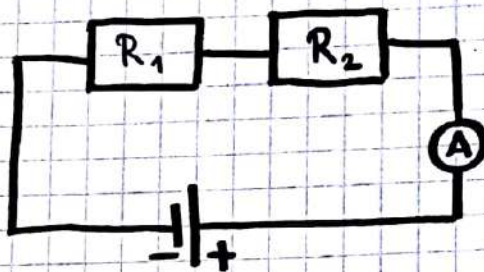
$$R_1 = 4 \Omega$$

$$R_2 = 5 \Omega$$

$$U = 4,5 \text{ V}$$

$$R = ?$$

$$I = ?$$



$$R = R_1 + R_2$$

$$R = 4 + 5$$

$$R = 9 \Omega$$

$$I = \frac{U}{R}$$

$$I = \frac{4,5 \text{ V}}{9 \Omega}$$

$$I = 0,5 \text{ A}$$

(26.)

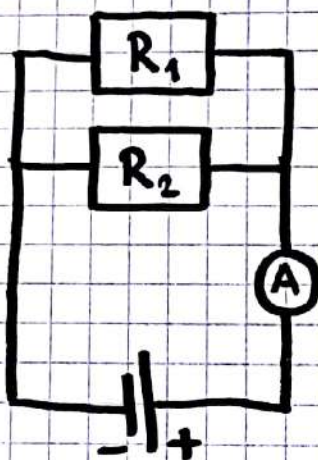
$$R_1 = 25 \Omega$$

$$R_2 = 100 \Omega$$

$$U = 220 \text{ V}$$

$$R = ?$$

$$I = ?$$



$$I = \frac{U}{R}$$

$$I = \frac{220 \text{ V}}{20 \Omega}$$

$$I = 11 \text{ A}$$

$$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2}$$

$$\frac{1}{R} = \frac{1}{25 \Omega} + \frac{1}{100 \Omega}$$

$$\frac{1}{R} = \frac{4}{100 \Omega} + \frac{1}{100 \Omega}$$

$$\frac{1}{R} = \frac{5}{100 \Omega}$$

$$5 R = 100 : 5$$

$$R = 20 \Omega$$



C/D

1. $t = 3s$

$$Q = 15C$$

$$I = ?$$

$$I = \frac{Q}{t}$$

$$I = \frac{15C}{3s}$$

$$I = 5A$$

2. $I = 8A$

$$t = 2s$$

$$Q = ?$$

$$Q = I \cdot t$$

$$Q = 8A \cdot 2s$$

$$Q = 16C$$

3. $I = 25A$

$$Q = 75C$$

$$t = ?$$

$$t = \frac{Q}{I}$$

$$t = \frac{75C}{25A}$$

$$t = 3s$$

4. (a) $I_2 = 0,3A$

(b) $I_2 = 0,1A$

(c) $I_1 = 1A, I_2 = 1A$

(d) $I_2 = I_1 = 0,3A, I_3 = I_1 + I_2 = 0,3A + 0,3A = 0,6A$