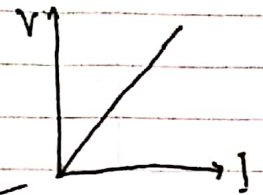
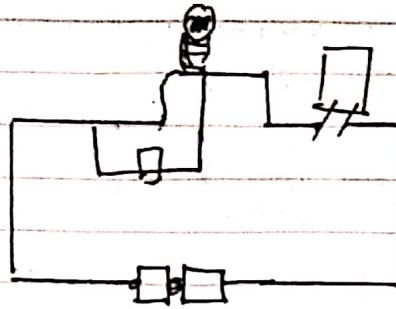
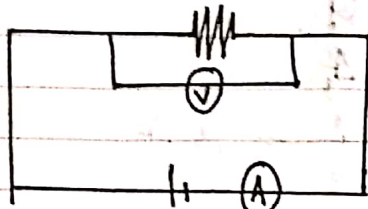


Elektrodinamika

1. Hukum Ohm
2. Rangkaian Listrik



Hubungan antara tegangan dan kuat arus.



$$I_1 = \frac{V}{(R_1 + R_2 + R_3)}$$

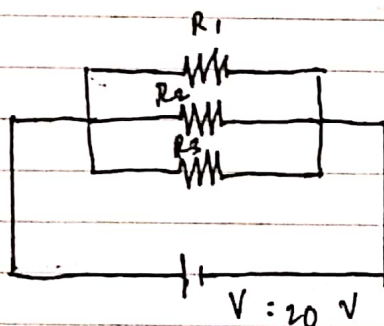
$$I_2 = \frac{V}{(R_1 + R_2 + R_3)}$$

$$I_3 = \frac{V}{(R_1 + R_2 + R_3)}$$

$$V_{R_1} = I \cdot R_1$$

$$V_{R_1} = \frac{V}{(R_1 + R_2 + R_3)} \cdot R_1$$

$$I = \frac{V}{(R_1 + R_2 + R_3)} \rightarrow I = I_{R_1} = I_{R_2} = I_{R_3}$$



$$R_1 = 2 \Omega$$

$$R_2 = 3 \Omega$$

$$R_3 = 4 \Omega$$

$$I_{R_1} = \frac{V}{R_1}$$

$$I_{R_2} = \frac{V}{R_2}$$

$$I_{R_3} = \frac{V}{R_3}$$

$$V_{R_1} = V_{R_2} = V_{R_3} = V$$

$$I = \frac{V}{R_t}$$

$$I = \frac{20}{0,92} = 21,73 \text{ A}$$

$$\frac{1}{R_t} = \frac{1}{2} + \frac{1}{3} + \frac{1}{4}$$

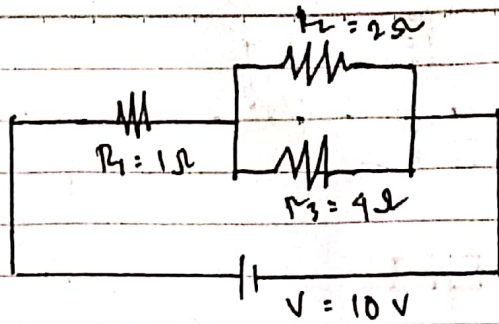
$$\frac{1}{R_t} = \frac{13}{12}$$

$$R_t = \frac{12}{13} \Omega = 0,92 \Omega$$

$$I_{R_1} = \frac{V}{R_1} = \frac{20}{2} = 10 \text{ A}$$

$$I_{R_2} = \frac{V}{R_2} = \frac{20}{3} = 6,6 \text{ A}$$

$$I_{R_3} = \frac{V}{R_3} = \frac{20}{4} = 5 \text{ A}$$



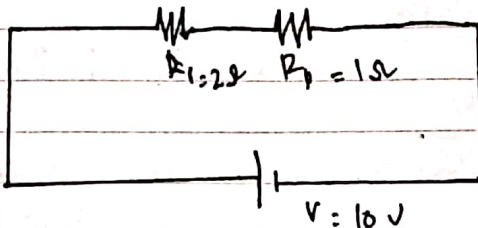
$$\frac{1}{R_p} = \frac{1}{R_2} + \frac{1}{R_3}$$

$$\frac{1}{R_p} = \frac{1}{2} + \frac{1}{4}$$

$$\frac{1}{R_p} = \frac{2}{4} + \frac{1}{4}$$

$$\frac{1}{R_p} = \frac{3}{4}$$

$$R_p = \frac{4}{3} \Omega$$



$$R_t = R_1 + R_2$$

$$= 2 + 1$$

$$= 3 \Omega$$

$$I_t = \frac{V}{R_t} = \frac{10}{3} = 3,3 \text{ A}$$

$$V_{Rp} = I \cdot R_p$$

$$= 3,3 \cdot 1$$

$$= 3,3 \text{ V}$$

$$I_{R2} = I_{R3} = \frac{V_{Rp}}{R_2}$$

$$= \frac{3,3}{2}$$

$$I_{R1} = 3,3 \text{ A}$$

$$V_{R1} = I \cdot R_1$$

$$= 3,3 \cdot 2$$

$$= 6,6 \text{ V}$$

$$= 1,65 \text{ A}$$

$$P_{R1} = 6,6 \cdot 3,3$$

$$= 21,78 \text{ watt}$$

$$P_{Rp} = 3,3 \cdot 3,3$$

$$= 10,89 \text{ watt}$$