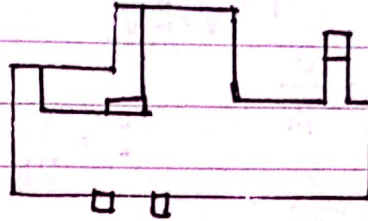
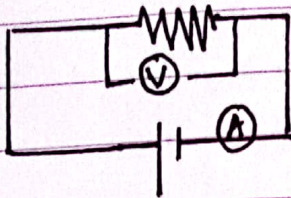
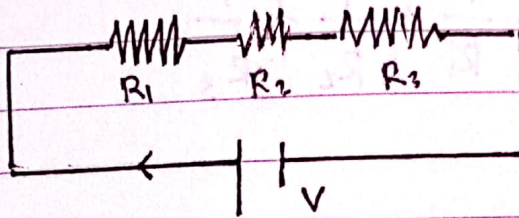


Elektrodinamika

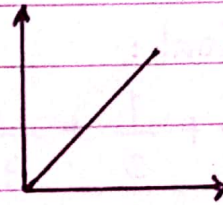
1. Hukum ohm
2. Rangkaian listrik.



$$\rightarrow V = I \cdot R$$



Hubungan antara tegangan dan kuat arus.



$$I_{R1} = \frac{V}{(R_1 + R_2 + R_3)}$$

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

$$I_{R2} = \frac{V}{(R_1 + R_2 + R_3)}$$

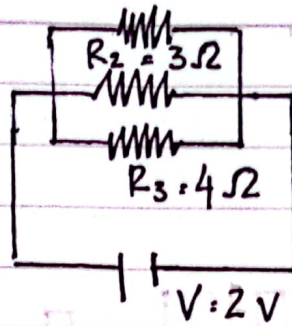
$$I_{R3} = I \text{ dan}$$

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

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

Pada rangkaian lampu tidak menggunakan rangkaian tidak paralel. Tegangan  $R_2 : I = I_{R1} = I_{R2} = I_{R3}$

$$R_1 = 2 \Omega$$



$$V_{R1} = V_{R2} = V_{R3} = V$$

Tegangan  $R_1 = \text{sumber}$

$$I_{R1} = \frac{V}{R_1}$$

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

$$I_{R2} = \frac{V}{R_2}$$

$$R_t = ?$$

$$I_{R3} = \frac{V}{R_3}$$

$$\frac{1}{R_t} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

Contoh soal.:

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

$$= \frac{6}{12} + \frac{4}{12} + \frac{3}{12}$$

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

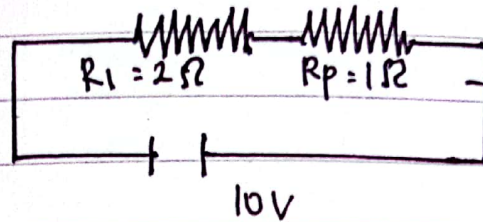
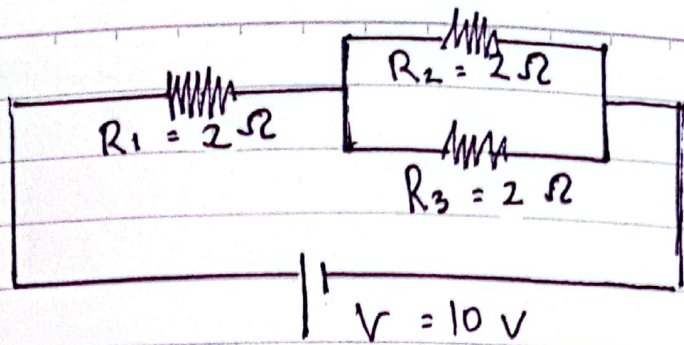
$$= \frac{12}{13}$$

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

$$I = \frac{20}{\frac{12}{13}}$$

$$= 21,73 \text{ A}$$





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

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

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

$$R_p = 1$$

$$R_t = R_1 + R_p = 2 + 1 = 3 \Omega$$

$$I_t = \frac{V}{R_t} = \frac{10}{3} = 3.33 \text{ A}$$

$$I_{R_1} = I_{R_p} = 3.33 \text{ A}$$

$$V_{R_p} = R_p \cdot I = 1 \cdot 3.33$$

$$V_{R_1} = \frac{V}{R_t} \cdot R_1 = \frac{10}{3} \cdot 2 = 3.33 \cdot 2$$

$$= 6.66 \text{ V}$$

$$I_{R_2} = I_{R_3} = \frac{V_{R_p}}{R_2}$$

$$= \frac{3.33}{2}$$

$$= 1.6 \text{ A}$$

Karena  $I_{R_1} = I_{R_p} = 3.33 \text{ A}$

$$V_{R_p} = 3.3 \text{ V}$$

$$V_{R_1} = 6.6 \text{ V}$$

Maka dari itu,

$$P_{R_1} = V_{R_1} \cdot I_{R_1}$$

$$= 6.6 \cdot 3.3$$

$$= 21.78 \text{ Watt}$$

$$P_{R_p} = V_{R_p} \cdot I_{R_p}$$

$$= 3.3 \cdot 3.3$$

$$= 10.89 \text{ Watt}$$