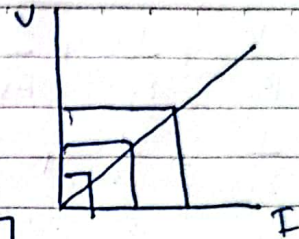
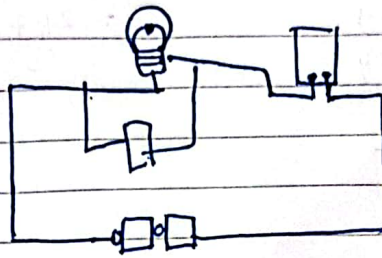
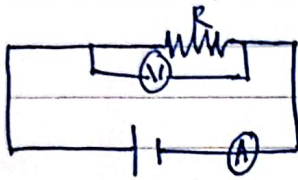


Elektrodinamika

Hukum Ohm $V = I \cdot R$ $\rightarrow$ Rnya tetap

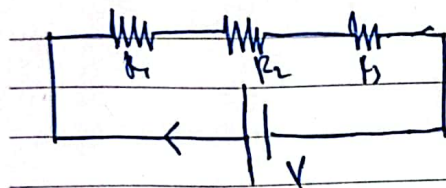
Rumus daya lampu $P = V^2 / R$

Gambar rangkaian listrik



Hubungan V dengan I dan P tetap

Sumber arus yang dapat membangkitkan lampu / listrik



Sifat rangkaian Seri

- lampu sama = hambatan sama

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

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

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

- Tegangan R_1 (V_{R1}) = $I \cdot R$

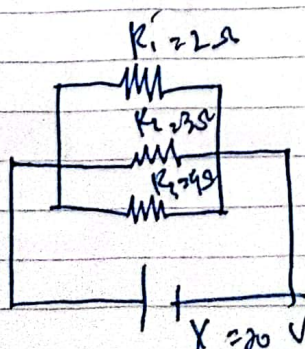
$$= \frac{V}{(R_1 + R_2 + R_3)} \cdot R_1$$

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

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

$$V_{R3} = \frac{V}{(R_1 + R_2 + R_3)} \cdot R_3$$

$$I = \frac{V}{(R_1 + R_2 + R_3)} \quad \boxed{I = I_{R1} = I_{R2} = I_{R3}}$$



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

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

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

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

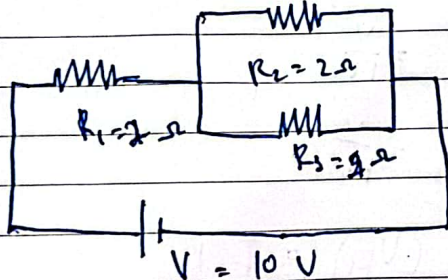
$$I = \frac{V}{R_t}$$

$$R_t$$

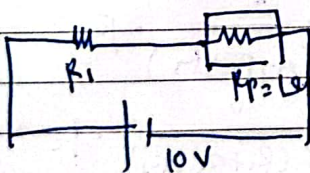
$$\frac{1}{R_t} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

$$\begin{aligned}
 \frac{1}{R_t} &= \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} & I &= \frac{20}{13} \\
 &= \frac{1}{2} + \frac{1}{3} + \frac{1}{4} & &= 2,73 \Omega \\
 &= \frac{6}{12} + \frac{4}{12} + \frac{3}{12} \\
 &= \frac{13}{12} \\
 &= \frac{12}{13} \\
 &= 0,92 \text{ ohm}
 \end{aligned}$$

Rangkaian Gabungan



$$\begin{aligned}
 \frac{1}{R_p} &= \frac{1}{R_2} + \frac{1}{R_3} & P &= V \cdot I \\
 &= \frac{1}{2} + \frac{1}{2} & &= 10. \\
 &= \frac{2}{4} + \frac{2}{4} \\
 &= \frac{4}{4} \\
 &= 1 \Omega
 \end{aligned}$$



$$\begin{aligned}
 R_t &= R_1 + R_p \\
 &= 2 + 1 \\
 &= 3 \Omega
 \end{aligned}$$

$$\begin{aligned}
 I_{K2} &= I_{K3} = \frac{V_{Rp}}{R_t} \\
 &= \frac{3,33}{2}
 \end{aligned}$$

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

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

$$\begin{aligned}
 I_{Rp} &= 3,33 \rightarrow V_{Rp} = R_p \cdot I \\
 &= 1 \cdot 3,3 \\
 &= 3,3 \text{ Volt}
 \end{aligned}$$