

cabaran

No. 29 - April - 2024

Date: Senin

Arus Listrik

Ektrodinamika

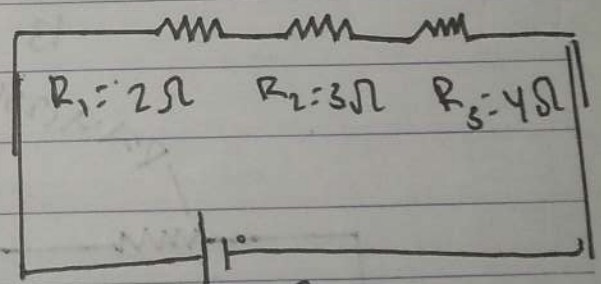
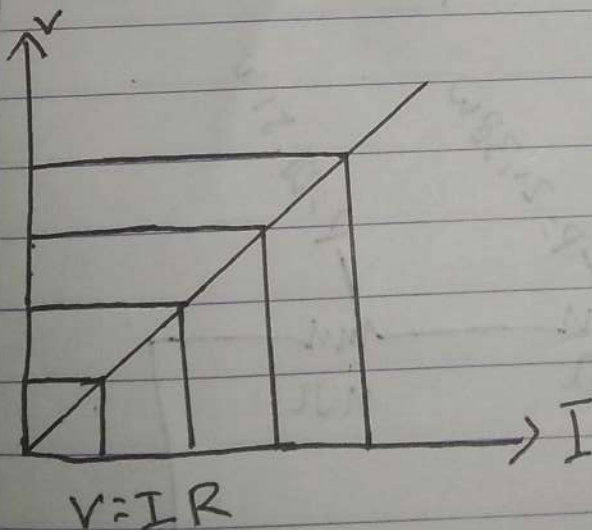
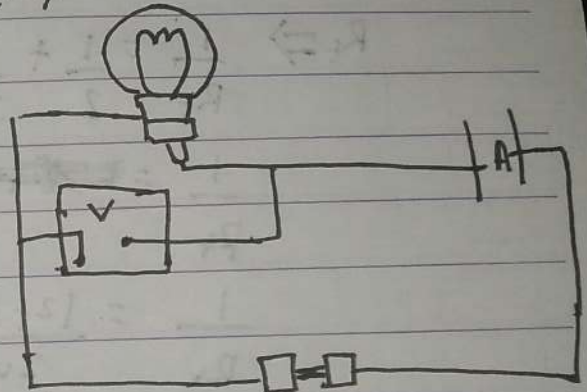
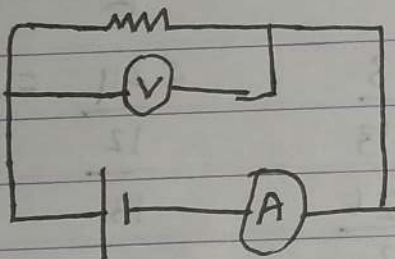
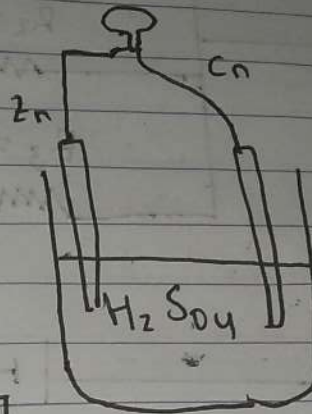
- ①. Hukum Ohm
- ②. Rangkaian listrik

Pembahasan :

1. Hukum Ohm

$$J = \sigma E \quad \leftarrow \theta C$$

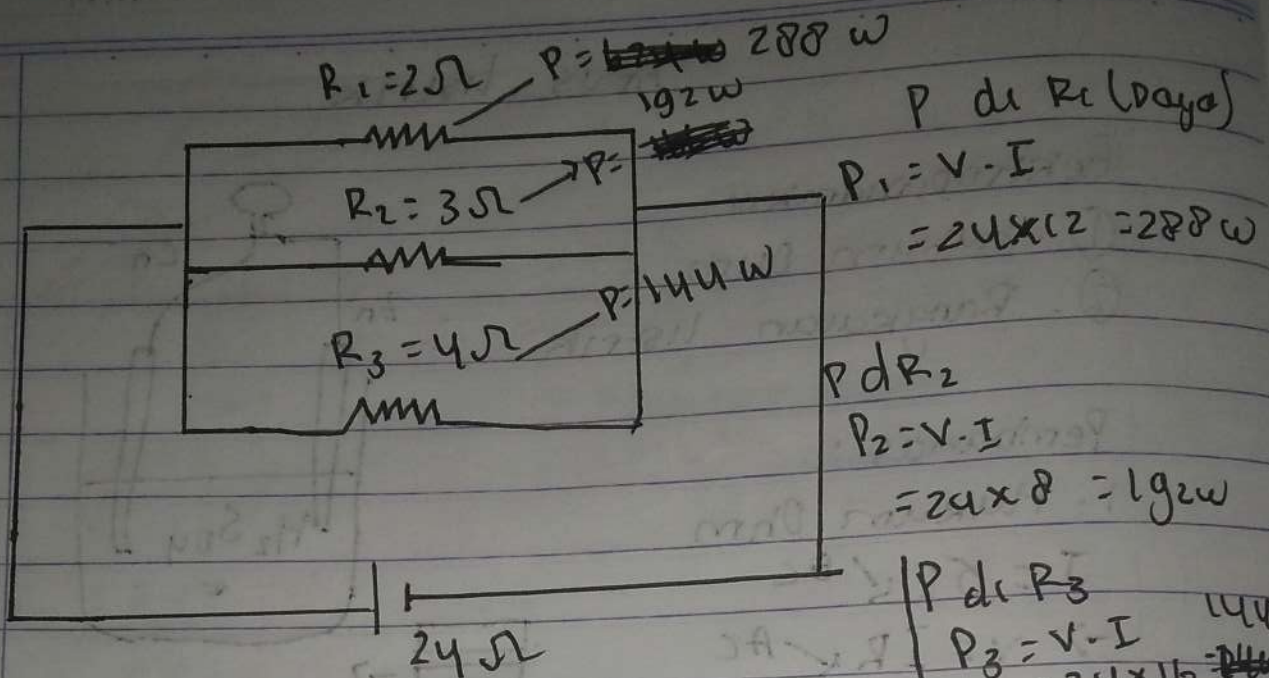
$$\rightarrow V = IR \quad \leftarrow AC$$



27 volt

$$R_t = 9\Omega$$

$$I = \frac{27}{9} = 3A$$



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

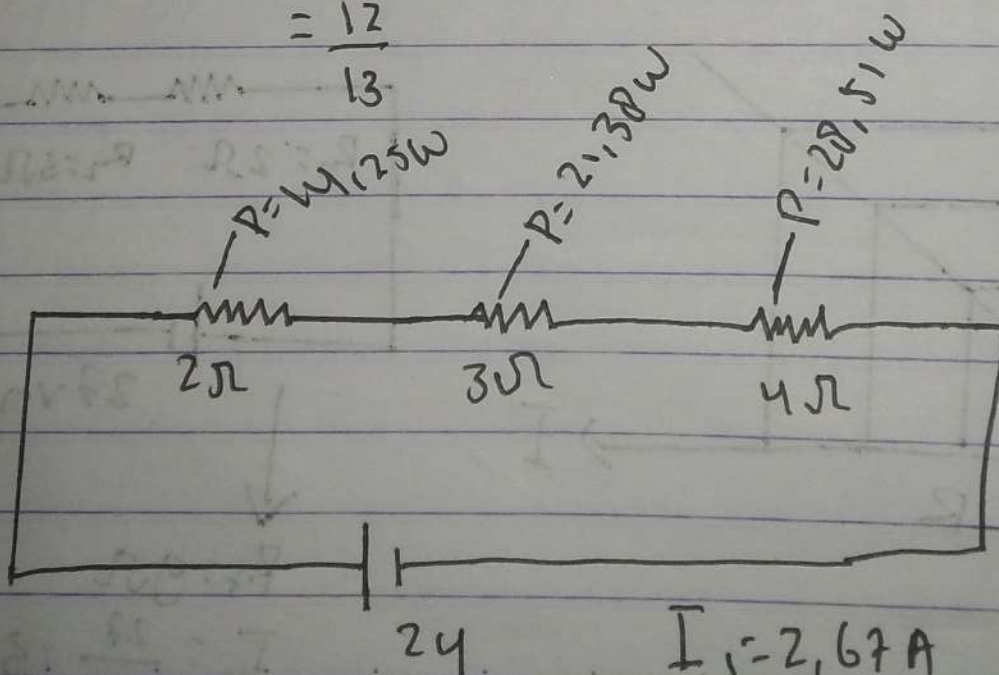
$$\frac{1}{R_t} = \frac{6+4+3}{12}$$

$$\frac{1}{R_t} = \frac{12+8+6}{24} = \frac{26}{24}$$

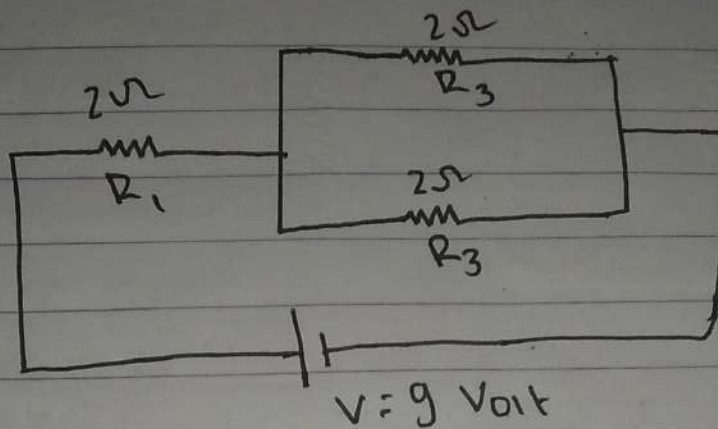
$$= \frac{12}{13}$$

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

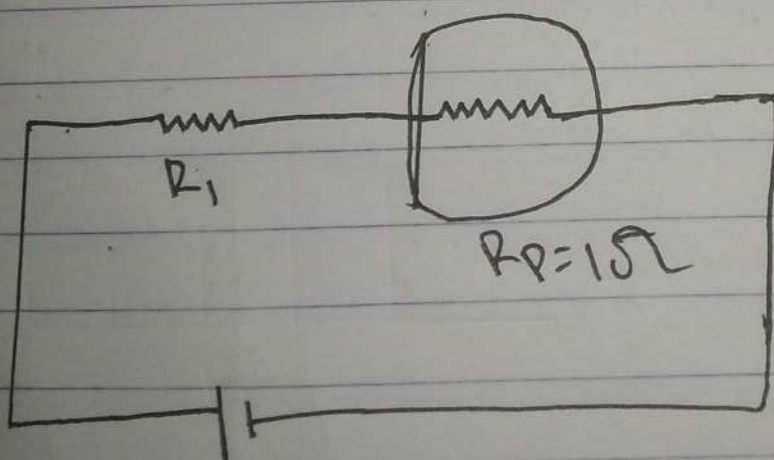
$$= \frac{24}{13} = 2.6A$$



Pada arus ~~yang~~ listrik yang pada Paralel yang sampai
 arus yang lebih besar pada arus listrik.

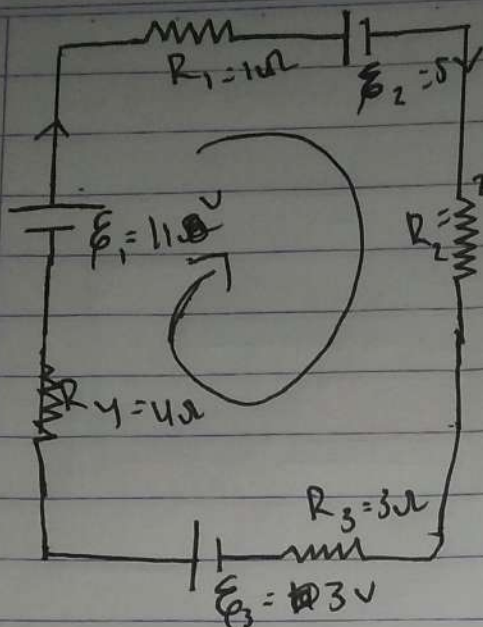


$$\begin{aligned}
 R_t &\Rightarrow \frac{1}{R_t} = \frac{1}{2} + \frac{1}{2} \\
 &= \frac{1}{4} + \frac{1}{4} \\
 &= \frac{2}{4} \\
 &= \frac{1}{2}
 \end{aligned}$$



$$\begin{aligned}
 R_t &= 3\Omega \\
 I &= 3 \text{ A} \\
 V_{R_p} &= I \cdot R_p = 3 \cdot 1 = 3 \text{ volt} \\
 V_{R_3} &= 3 \text{ volt} \\
 V_{R_3} &= 3 \text{ volt}
 \end{aligned}$$

$$\begin{aligned}
 \frac{1}{R_p} &= \frac{1}{2} + \frac{1}{2} \\
 &= \frac{2}{4} + \frac{2}{4} = \frac{4}{4} = 1\Omega
 \end{aligned}$$



$$E_1 > E_2 > E_3$$

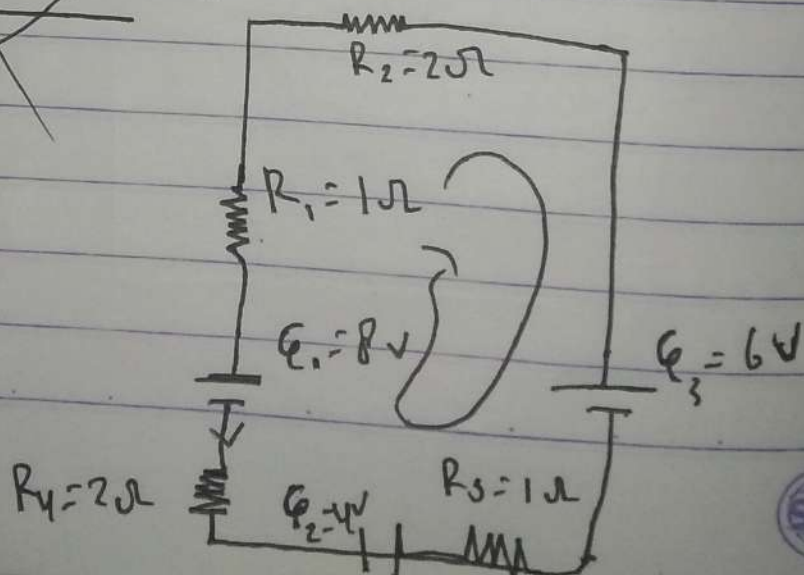
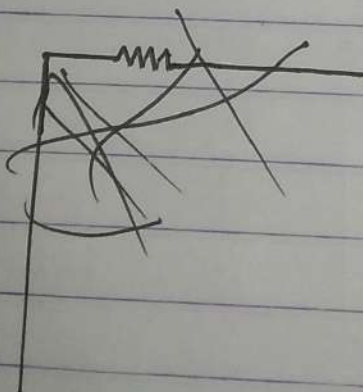
1. gambar arah arus sesuai dengan besarnya E
2. Gambar loop sesuai hati mu
3. Jika ~~arah arus~~ arah arus dengan arah loop, maka t.

$$\sum E + \sum I \cdot R = 0$$

$$-E_1 + E_2 + E_3 + I(R_1 + R_2 + R_3 + R_4) = 0$$

$$11 + 5 + 3 + I(1 + 2 + 3 + 4) :$$

$$I = \frac{2}{10} = \frac{1}{5} = 0,2 \text{ A}$$



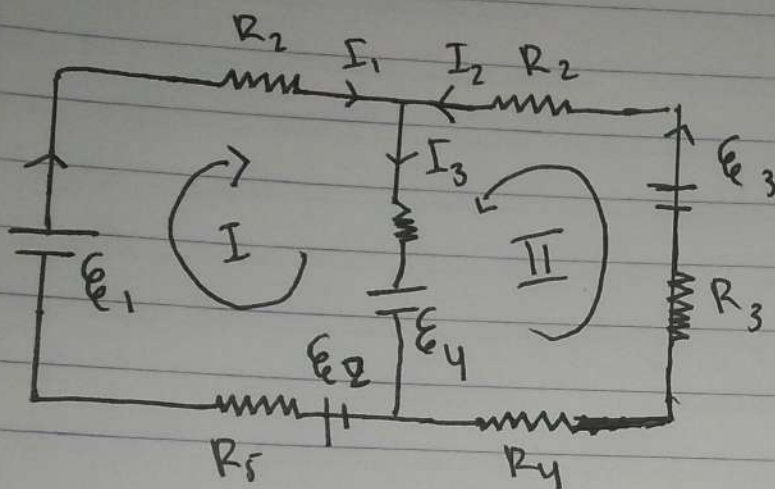
$$\sum \mathcal{E} + \sum I \cdot R = 0$$

$$\mathcal{E}_1 + \mathcal{E}_2 + \mathcal{E}_3 + I(R_1 + R_2 + R_3 + R_4) = 0$$

$$8 + 4 - 6 - I(1 + 2 + 1 + 2) = 0$$

$$6 - I(6) = 0$$

$$I = \frac{6}{6} = 1 \text{ A}$$



Loop I

$$\sum \mathcal{E} + \sum IR = 0$$

$$-\mathcal{E}_1 + \mathcal{E}_4 + \mathcal{E}_2 + I_1(R_1 + R_5) + I_3 R_6 = 0$$

Loop II

$$\sum \mathcal{E} + \sum I \cdot R = 0$$

$$-\mathcal{E}_3 + \mathcal{E}_4 + I_2(R_2 + R_3 + R_4) + I_3 R_6 = 0$$