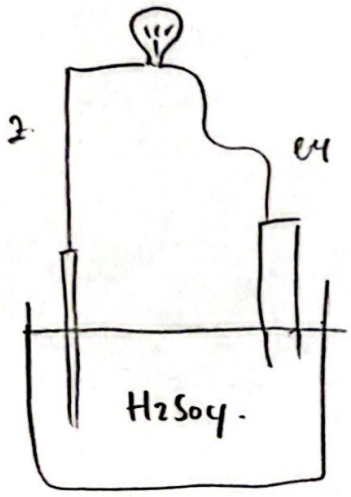
Kalisma

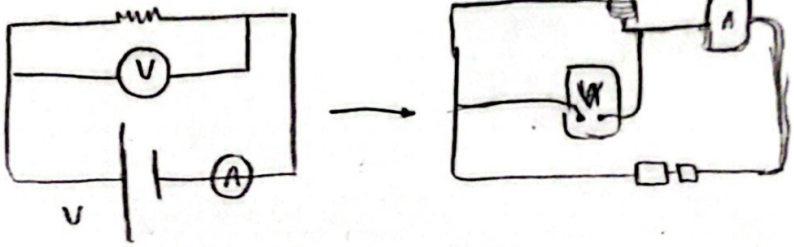
29 April 2024

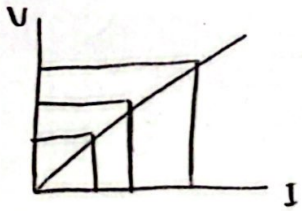
Elektrodinamika

1) Hukum Ohm
2) Rangkaian Listrik

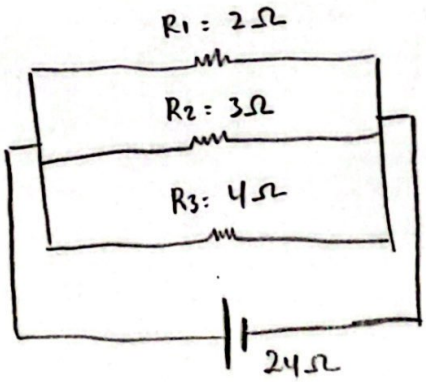
$R_1 = 2\Omega$







$V = I \cdot R$.

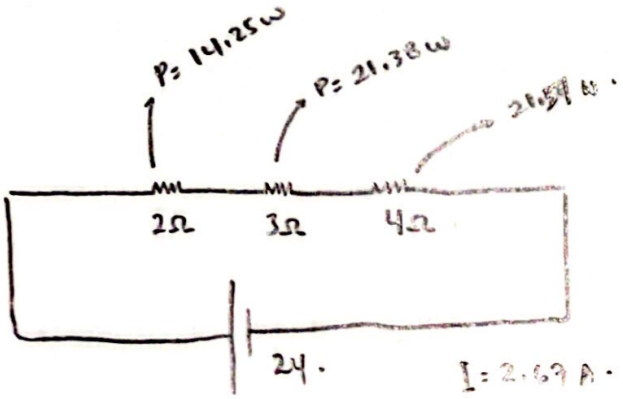


$$R_t = \frac{1}{R_t} = \frac{1}{2} + \frac{1}{3} + \frac{1}{4}$$

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

$$\frac{1}{R_t} = \frac{26}{24}$$

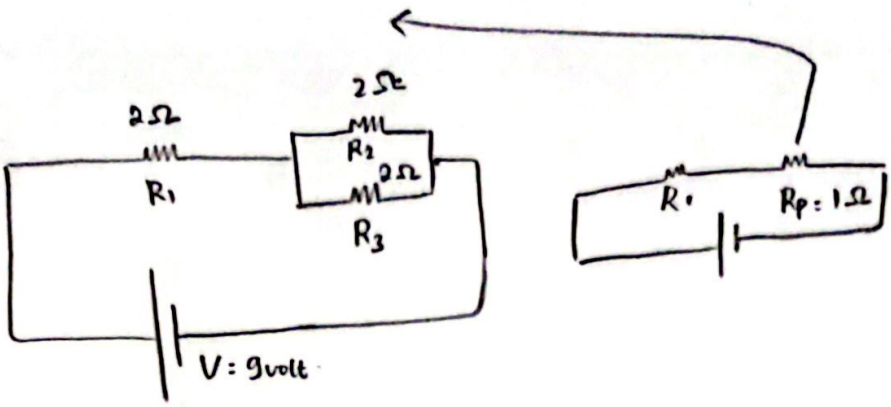
$$R_t = \frac{12}{13}$$



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

$$= \frac{24}{12/13}$$

$$= 26\ A.$$



$R_t = 3\Omega$

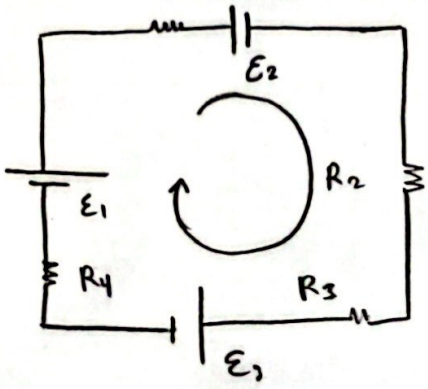
$I = 3A$.

$V_{pf} = I \cdot R_p = 3 \cdot 1 = 3$ volt

$V_{R_2} = 3$ volt

$V_{R_3} = 3$volt

Hukum Kirchoff

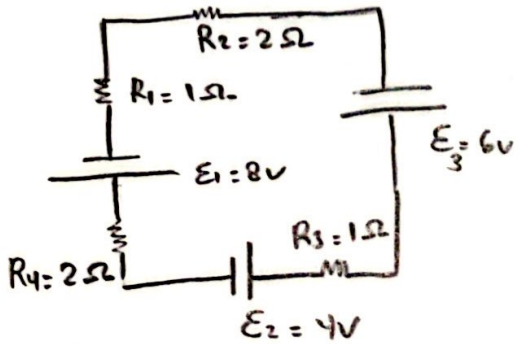


$\varepsilon_1 > \varepsilon_2 > \varepsilon_3$

1) Gambar arah arus sesuai dengan besarnya.
2) Gambar loop
3) Jika arah arus searah dengan arah loop, maka +.

$\Sigma \varepsilon + \Sigma \cdot I \cdot R = 0$

$\varepsilon_1 + \varepsilon_2 + \varepsilon_3 + I\,(R_1 + R_2 + R_3) = 0$.



$\Sigma_\varepsilon + \Sigma IR = 0$

$\varepsilon_1 + \varepsilon_2 - \varepsilon_3 - I\,(R_1 + R_2 + R_3 + R_4) = 0$

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

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

$I = {}^{6}/_{6}$

$I = 1A$, Jadi, arus yang mengalir adalah 1A.