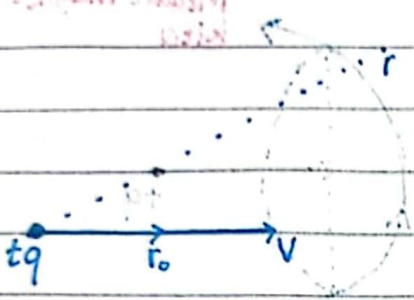


Medan Magnet

- Terdapat atom-atom elektron yang terbentuk

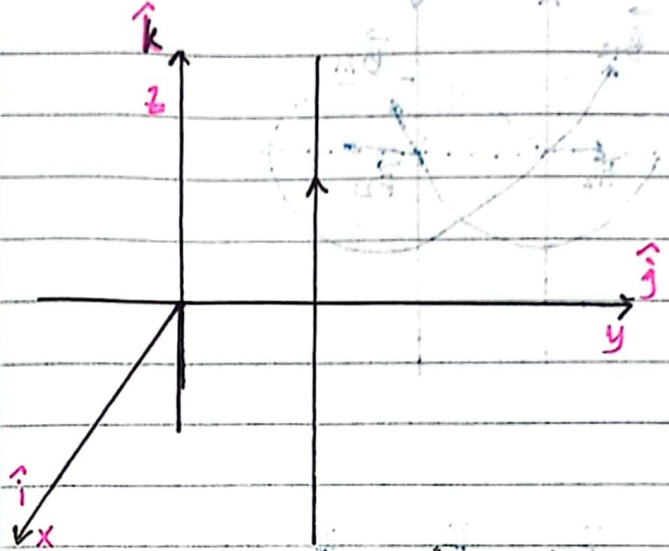
1. Medan magnet oleh muatan bergerak.



$$\vec{B} = \frac{\mu_0}{4\pi} \frac{qv \times \hat{r}_0}{r^2}$$

$$= \frac{\mu_0 qv}{4\pi r^2} \sin \theta$$

Gambar secara matematis



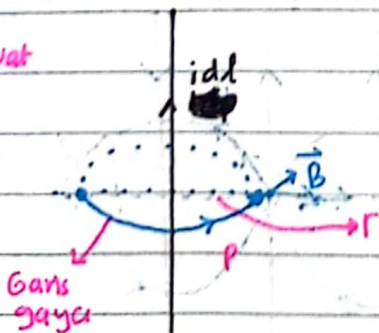
$$\vec{B} = \frac{\mu_0}{4\pi} \frac{idl \hat{k} \times \hat{j}}{r^2}$$

$$= \frac{\mu_0}{4\pi} \frac{idl}{r^2} \sin \theta (-\hat{i})$$

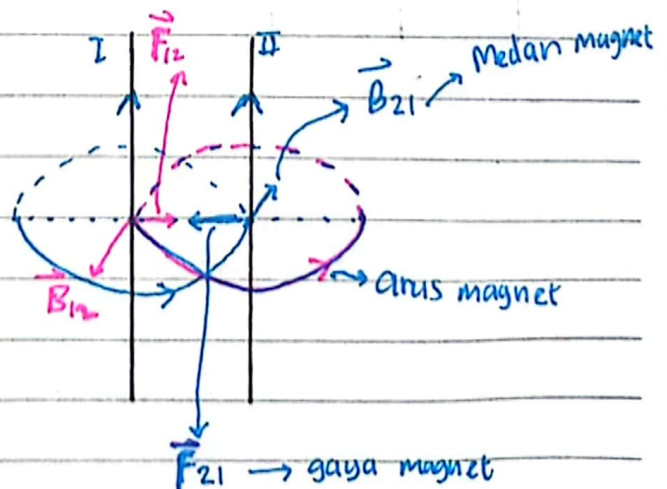
2. $\vec{B}$ oleh arus listrik

* Medan selalu menyinggung garis gaya

Jika kawat ada I



$$\vec{B} = \frac{\mu_0}{4\pi} \frac{idl \times \hat{r}_0}{r^2}$$

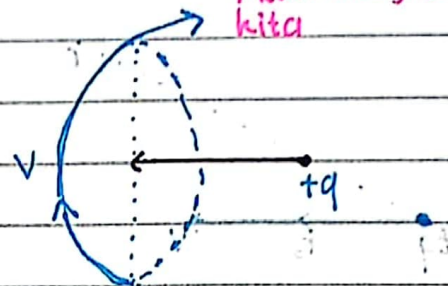


Note: Menggunakan sistem tangan kanan
 Ibu jari → Arus
 Medan → jari
 Gaya magnet → telapak tangan

Tendinitis

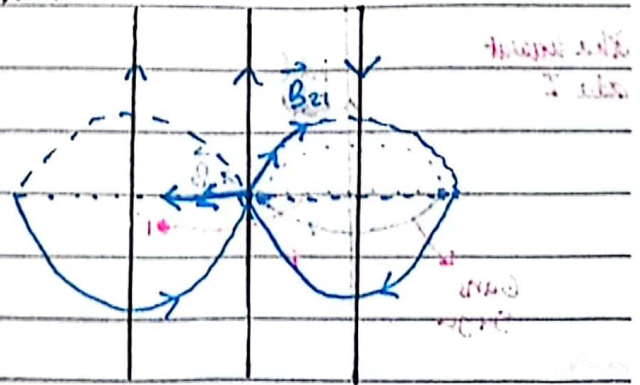


Medan magnet menjauhi kita

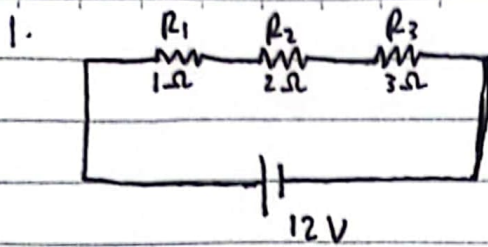


The diagram shows a coordinate system with a horizontal dashed line and three vertical lines labeled I, II, and III. Region I is to the left of line I, Region II is between lines I and II, and Region III is to the right of line II. A blue curve with arrows represents a particle path that starts in Region I, moves right, then curves down and left, crossing line I and line II, and finally crossing line III. A pink curve with arrows represents another path that starts in Region II, moves right, then curves down and left, crossing line II and line III. At the intersection of the paths and line III, there are four vectors: $\vec{B}_{31}$ (blue, pointing up and left), $\vec{B}_{32}$ (pink, pointing up and right), $\vec{F}_{31}$ (blue, pointing right), and $\vec{F}_{32}$ (pink, pointing right).

Pada kawat 2

[illegible]

NPM: 2213022006



15

a. Hitung arus pada R_3 b. Hitung tegangan pada R_2

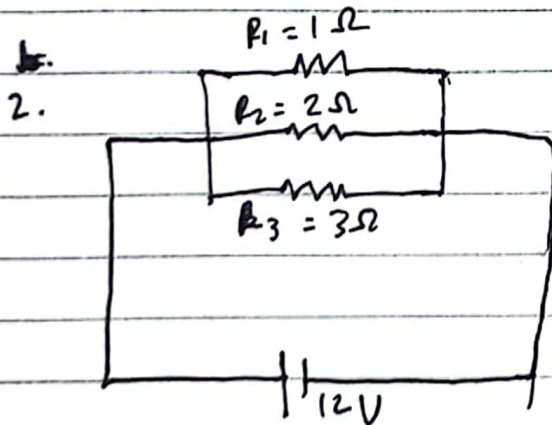
Jawab:

a. arus R_3 b. Tegangan R_2

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

$$= \frac{12}{6}$$

$$= 2 \text{ A}$$



0

a. Hitung arus pada R_3

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

$$\frac{1}{R_t} = \frac{6}{6} + \frac{3}{6} + \frac{2}{6}$$

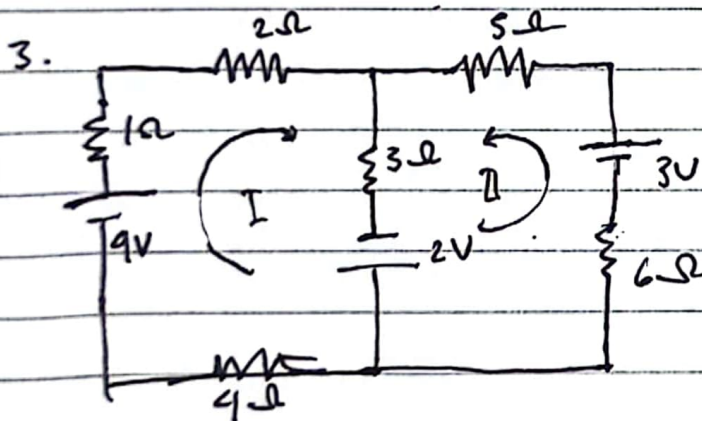
$$\frac{1}{R_t} = \frac{11}{6} \rightarrow R_t = \frac{6}{11}$$

-20km

$$I = \frac{V}{R} = \frac{12}{\frac{6}{11}}$$

$$I = \frac{12}{\frac{6}{11}} = 21,99 \approx 22 \text{ A}$$

b. Tegangan R_2



Hitung arus tiap loop (I_1, I_2, I_3)

loop 1

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

$$-4V + 2V + 3V + I_1 (5\Omega + 6\Omega + 4\Omega) + I_2 3\Omega = 0$$

$$1V + I_1 (15\Omega) + I_2 3\Omega = 0$$

$$1V + I_1 (10\Omega) = 0$$

$$I = \frac{10}{1} = 10 \text{ A}$$

$$I = 20,5 \text{ A}$$

loop 2

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

$$-3 + 2 + I_2 (5\Omega + 6\Omega + 9\Omega) = 0$$

$$-1 + I (1\Omega) = 0$$

$$I = \frac{15}{-1}$$

$$= -15 \text{ A}$$

loop 3

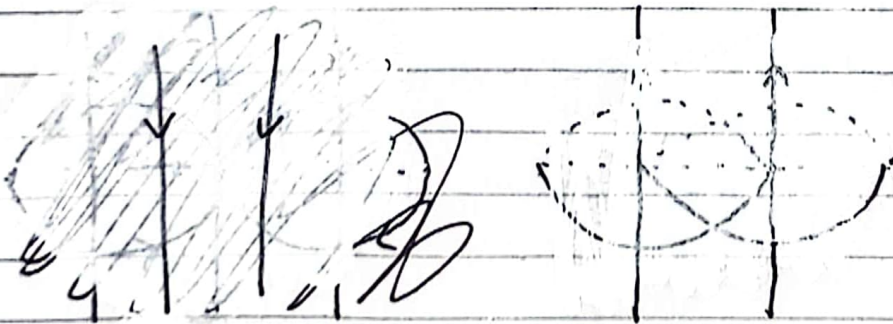
$$\sum \mathcal{E} + \sum IR = 0$$

$$2 + 9 + I_3 (9\Omega + 1\Omega + 2\Omega) = 0$$

$$2 + I (11) = 0$$

$$I = \frac{7}{-1} = -7 \text{ A}$$

4.



jawab

