

Nama: Indah Purnama.

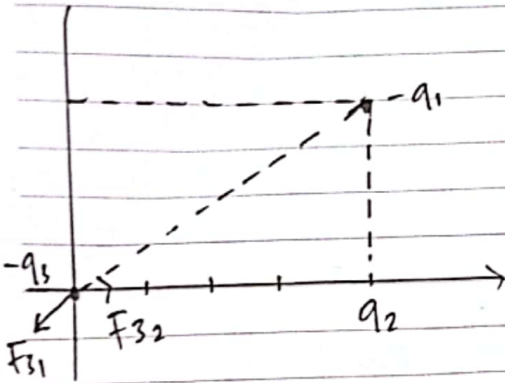
No 18 Maret
Date 2024

Kalisma

Medan Magnet

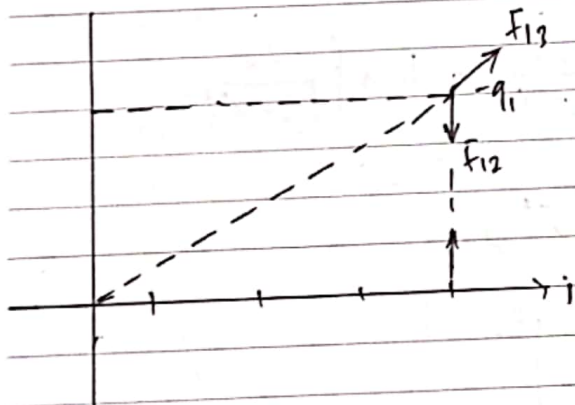
catatan:

- (+) = Menjauh
- (-) = Mendekat.



$$\vec{F}_{31} = \frac{1}{4\pi\epsilon_0} \frac{q_2 \cdot q_1}{5^2} (-4\hat{i} - 3\hat{j})$$

$$\vec{F}_{32} = \frac{1}{4\pi\epsilon_0} \frac{q_3 \cdot q_2}{q^2}$$



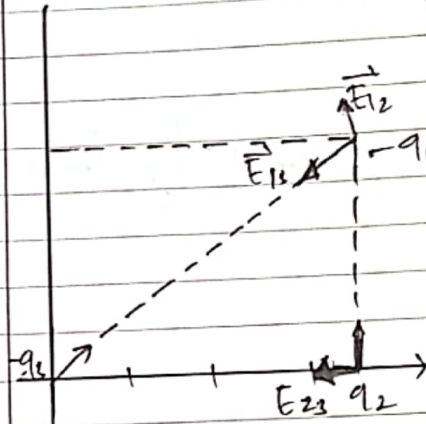
$$\vec{F}_{12} = k \frac{q_1 q_2}{s^2} \frac{0\hat{i} + 3\hat{j}}{3}$$

$$\vec{F}_{12} = -k \frac{q_1 q_2}{s^2} \hat{j}$$

$$\vec{F}_{13} = k \frac{q_1 q_3}{5^2} \frac{(4\hat{i} + 3\hat{j})}{5}$$

$$\vec{F}_{21} = k \frac{q_2 q_1}{3^2} \frac{(3\hat{i} + 0\hat{j})}{3} = k \frac{q_3 \cdot q_1}{3} \hat{j}$$

$$\vec{F}_2 = k \frac{q_2 q_1}{4^2} \frac{(4\hat{i} + 0\hat{j})}{4} = k \frac{q_2 q_2}{4^2} (-\hat{i})$$



$$\vec{E}_{32} \cdot \frac{F}{q_3} = k \frac{q_2}{r^2}$$

$$= k \frac{q_2}{r^2} \dots \text{Pers...1}$$

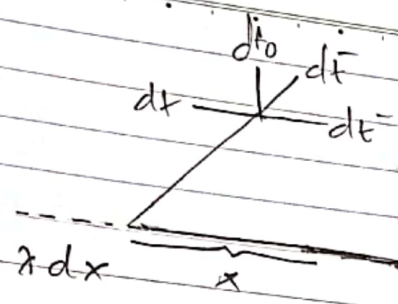
example:

$$\vec{E}_{31} = k \frac{q_1}{r^2} = \left(\frac{4\hat{i} + 3\hat{j}}{5} \right)$$

$$\vec{E}_{32} = k \frac{q_2}{r^2} = k \frac{q_2}{4^2} (-\hat{i})$$

$$\vec{E}_{21} = k \frac{q_1}{r^2} = k \frac{(0\hat{i} + 3\hat{j})}{3^2}$$

$$= k \frac{q_1}{3} (3)$$



$$d\vec{E} \cdot d\vec{E} = dE_x + dE_y$$

$$d\vec{E} \cdot d\vec{E} = dE \cos \theta$$

$$\vec{E} = k \int \frac{\lambda dx}{r^2} \cos \theta$$

misal :

$$\cos \theta = \frac{x}{r}$$

$$r = \frac{z}{\cos \theta}$$

$$\log x = \frac{x}{2}$$

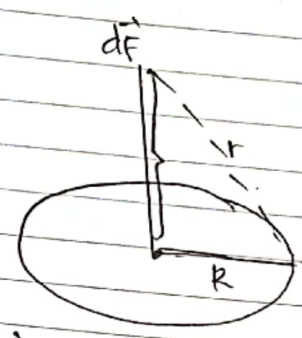
$$x = z \log \theta \rightarrow dx = \frac{z}{\cos^2 \theta}$$

$$x = -\infty$$

$$\theta = -\frac{\pi}{2}$$

$$x = \infty$$

$$\theta = \frac{\pi}{2}$$



$$\vec{E} = k \int_0^L \frac{\lambda dl}{(r^2 + z^2)^{3/2}} \cos \theta$$

$$= k \lambda z \int_0^L \frac{dl}{(a^2 + z^2)^{3/2}}$$

$$r = \frac{z}{\cos \theta}$$

$$r^2 = (z^2 + R^2)^{1/2}$$