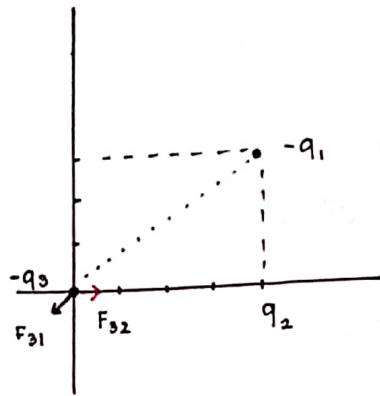
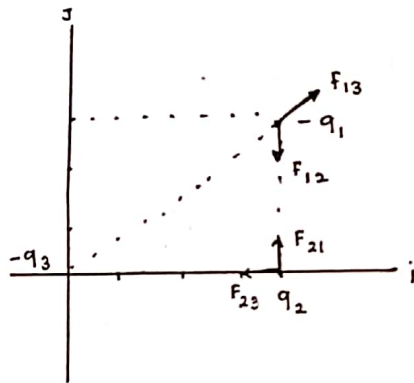




$$\vec{F}_{31} = \frac{1}{4\pi\epsilon_0} \frac{q_3 \cdot q_1}{5^2} \left(\frac{-4\hat{i} - 3\hat{j}}{5} \right)$$

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



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

$$\vec{F}_{12} = -k \frac{q_1 q_2}{3^2} \hat{j}$$

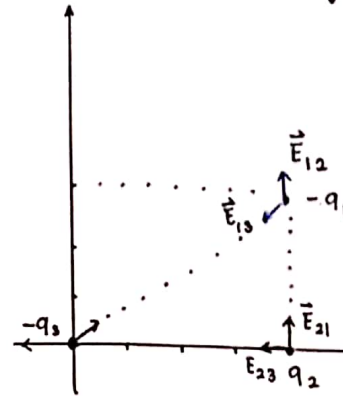
$$\vec{F}_{13} = k \frac{q_1 q_3}{5^2} \left(\frac{4\hat{i} + 3\hat{j}}{5} \right)$$

$$\vec{F}_{21} = k \frac{q_2 q_1}{3^2} \left(\frac{1\hat{i} + 0\hat{j}}{3} \right) = k \frac{q_2 q_1}{3} \hat{i}$$

$$\vec{F}_{23} = k \frac{q_2 q_3}{4^2} \left(\frac{-1\hat{i} + 0\hat{j}}{4} \right) = k \frac{q_2 q_3}{4^2} (-\hat{i})$$

Note:

- kalo (+) menjauh
- kalo (-) menuju



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

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

example:

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

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

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

$$= k \frac{q_1}{3^2} (\hat{j})$$

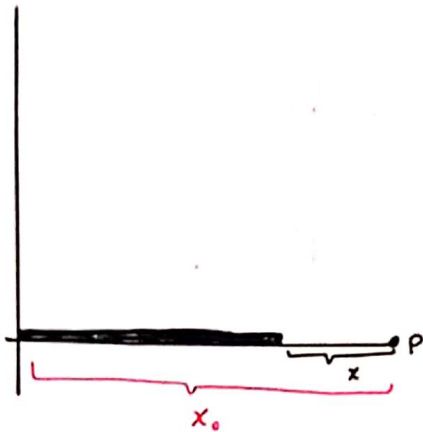
► Muatan Non - Diskrit

$$\vec{E} = k \frac{q}{r^2} \hat{r}$$

$$= k \sum_{i=1}^n \frac{q_i}{r_i^2} (\hat{r}_{oi})$$

$$= k \left[\sum_{i=1}^n \frac{q_i}{r_i^2} \hat{r}_{oi} + \frac{q_2}{r_2^2} \hat{r}_{o2} + \dots + \frac{q_n}{r_n^2} \hat{r}_{on} \right]$$

$$\vec{E} \cdot k \int$$



$\vec{E}_P \dots ?$

$$\vec{E} \cdot k \int_0^L \frac{x dx}{(x_0 - x)^2} = k \lambda \int \frac{dx}{(x_0 - x)^2}$$

$$\int \frac{dx}{x^2} = \int x^{-2} dx$$

$$= -x^{-1} \Big|_0^L$$

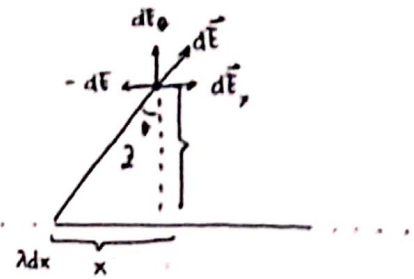
$$= \frac{1}{x} \Big|_0^L$$

$$= k \lambda \int_0^L (x_0 - x)^{-2} dx$$

$$= k \lambda \left[\frac{1}{(x_0 - x)} \Big|_0^L \right]$$

$$= k \lambda \left[\frac{1}{(x_0 - L)} - \frac{1}{(x_0 - 0)} \right]$$

$$= k \lambda \left[\frac{x_0 - (x_0 - L)}{x_0 (x_0 - L)} \right] = 0 \frac{L}{x_0 (x_0 - L)}$$



$$d\vec{E} \cdot d\vec{E}_y + d\vec{E}_x$$

$$d\vec{E} \cdot d\vec{E}_y$$

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

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

misal :

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

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

$$\lg \theta = \frac{x}{z}$$

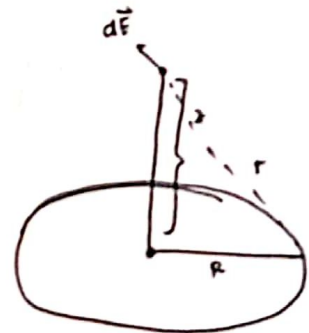
$$x = z \lg \theta \rightarrow dx = \frac{z}{\cos^2 \theta}$$

$$x = -\infty$$

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

$$x = \infty$$

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



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

$$= k \lambda z \int \frac{dl}{(z^2 + R^2)^{3/2}}$$

$$\frac{2}{r}$$

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

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