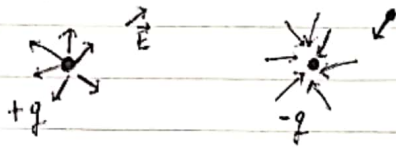


Medan listrik ($\vec{E}$)

$$\vec{E}_1 = \sum \vec{E}_i$$

$$= \frac{F_{q3}}{q_1} + \frac{F_{q2}}{q_1}$$

$$\vec{E} = k \frac{q_3}{r^2} + k \frac{q_2}{r^2}$$

$$1. \vec{E} = \frac{1}{4\pi\epsilon_0} \frac{q}{r^2} \hat{r}_0$$

$$= k \frac{q}{r^2} \hat{r}_0 \rightarrow \text{oleh muatan diskrit}$$

$$2. \vec{E} = \frac{1}{4\pi\epsilon_0} \int \frac{\lambda dl}{r^2} \hat{r}_0 \rightarrow q = \lambda r \rightarrow \text{muatan terdistribusi pada Penggaris}$$

$$3. \vec{E} = \frac{1}{4\pi\epsilon_0} \iint \frac{da}{r^2} \hat{r}_0 \rightarrow \text{Luas Permukaan}$$

$$4. \vec{E} = \frac{1}{4\pi\epsilon_0} \iiint \frac{\rho dV}{r^2} \hat{r}_0$$

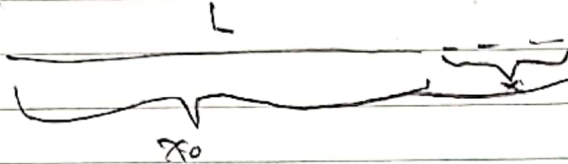
$$\vec{E} = \frac{2\lambda z}{4\pi\epsilon_0} \int_0^L \frac{dx}{(x^2 + z^2)^{3/2}}$$

$$\vec{E} = \left[\frac{2\lambda z}{4\pi\epsilon_0} \left(\frac{x}{z^2 \sqrt{x^2 + z^2}} \right) \right]_0^L = \left[\frac{1}{z^2 \sqrt{L^2 + z^2}} - \frac{0}{z^2 \sqrt{0 + z^2}} \right]$$

$$= \left[\frac{1}{z^2 \sqrt{L^2 + z^2}} \right]$$

$$\frac{2}{r} + \frac{3}{2}$$

$$\frac{1}{4\pi\epsilon_0} \left(\frac{2\lambda L}{2\sqrt{r^2 + L^2}} - \frac{2\lambda L}{2r} \right)$$



$$\vec{E} = \frac{1}{4\pi\epsilon_0} \int_0^L \frac{x dx}{(x_0 - x)^2}$$

$$\vec{E} = \left[\frac{1}{4\pi\epsilon_0} \int_0^L (x_0 - x)^{-2} dx \right]$$

$$= \left[(x_0 - x)^{-1} \right]_0^L$$

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

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