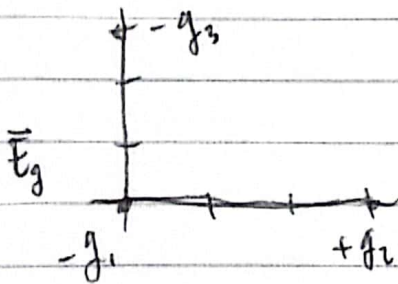
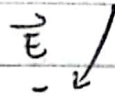
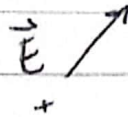


Medan Listrik ($\vec{E}$)

Gaya $\rightarrow$ adanya interaksi
Medan Listrik ($\vec{E}$)

aliran energi
 $\rightarrow$ gelombang gunyi



$$\vec{E}_g = \sum \vec{F}$$

$$= \frac{F_{g3}}{q_1} + \frac{F_{g2}}{q_1}$$

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

Distribusi Muatan

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

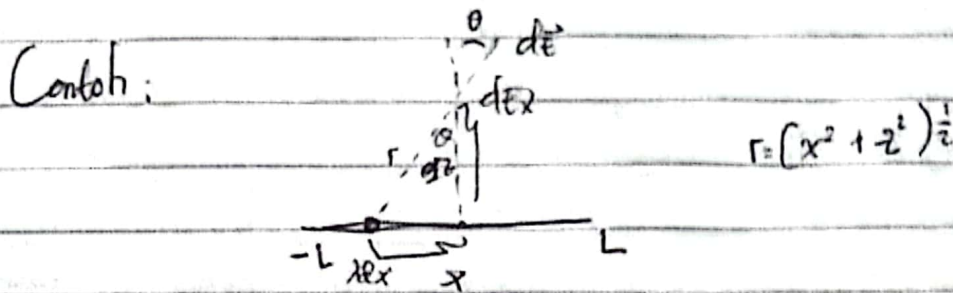
$$= k \frac{q}{r^2} \hat{r}_0 \rightarrow \text{oleh muatan diskrit}$$

$$(2) \vec{E} = \frac{1}{4\pi\epsilon_0} \int \frac{\lambda dl}{r^2} \hat{r}_0 \rightarrow q = \lambda \cdot l \quad \text{muatan terdistribusi pada penggaris}$$

$$(3) \vec{E} = \frac{1}{4\pi\epsilon_0} \iint \frac{\sigma da}{r^2} \hat{r}_0 \quad \text{luas permukaan.}$$

$$(4) \vec{E} = \frac{1}{4\pi\epsilon_0} \iiint \frac{\rho dv}{r^2} \hat{r}_0$$

Keterangan hal 50 : $() = \frac{k}{r^2} = \frac{1}{4\pi\epsilon_0 r^2}$



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

$$d\vec{E} = dE_y$$

$$dE_y = dE \cos \theta$$

$$\vec{E} = \frac{1}{4\pi\epsilon_0} \int_{-L}^L \frac{\lambda dx}{r^2} \cos \theta$$

$$= \frac{2}{4\pi\epsilon_0} \int_0^L \frac{\lambda dx}{(x^2 + z^2)} \cos \theta$$

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

$$= \left[\frac{dx}{(x^2 + z^2)^{3/2}} = \frac{x}{z^2 \sqrt{x^2 + z^2}} \right]$$

$$E_0 = \frac{2\lambda z}{4\pi\epsilon_0} \left(\frac{x}{z^2 \sqrt{x^2 + z^2}} \right) \Big|_0^L = \boxed{\left[\frac{L}{z^2 \sqrt{L^2 + z^2}} - \frac{0}{z^2 \sqrt{0 + z^2}} \right]}$$
$$= \boxed{\left[\frac{L}{z^2 \sqrt{L^2 + z^2}} \right]}$$