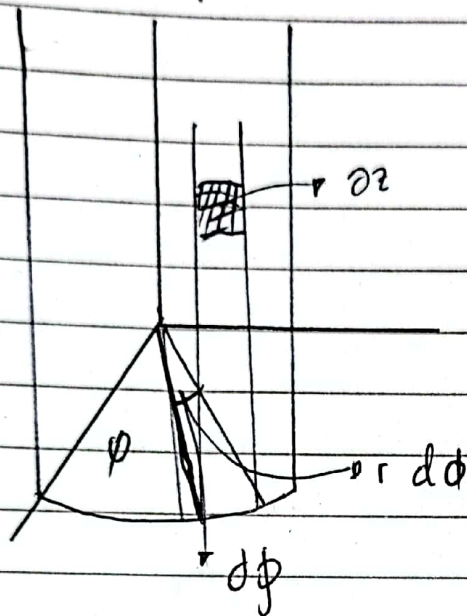


Pak Wadig

Sylinder

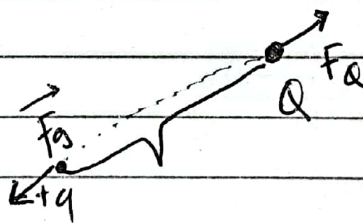


$$A = r \, d\phi \, dz$$

$$V = r \, d\phi \, dz \, d\phi$$

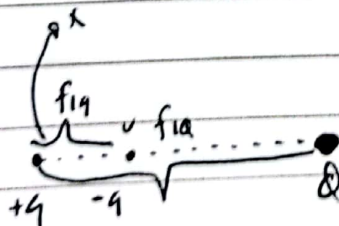
Medan / Gaya Listrik

⇒ Medan listrik
 $q = \pm Ne$



$$\vec{F}_q = \vec{F}_Q = \vec{F} = \frac{1}{4\pi\epsilon_0} \frac{qQ}{r^2} \hat{r}_0$$

$$\hat{r}_0 = \frac{\vec{r}}{|\vec{r}|}$$



Q > q

$$f_{1q} = f_{1Q}$$

$$k \frac{q_1 q_2}{r^2}$$

$$(1 - x^2)$$

$$= \frac{q_1 q_2}{(x^2)}$$

$$(1 - x^2)$$

$$(1 - x^2)$$

$$(1 - x^2)$$

$$(1 - x^2)$$

$$(1 - x^2)$$



$$K \frac{1.2}{x^2} = K \frac{1.5}{(10+x)^2}$$

$$\frac{2}{x^2} = \frac{3}{x^2 + 20x + 100}$$

$$3x^2 = 2x^2 + 40x + 200$$

$$3x^2 - 2x^2 = 40x + 200 = 0$$

$$x^2 - 40x - 200 = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$= \frac{(-40) \pm \sqrt{(-40)^2 - 4 \cdot 1 \cdot (-200)}}{2 \cdot 1}$$

$$= -40 + \sqrt{\frac{1600 + 800}{2}}$$

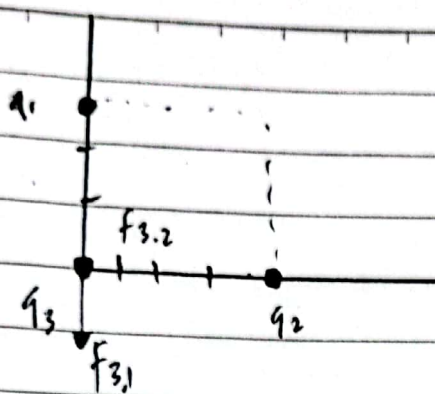
$$= -40 + \sqrt{1200}$$

$$= -40 + 20$$

$$= -40 - 20$$

$$= -20$$

$$= -60$$



$$\vec{F}_{3,2} = K \frac{q_3 \cdot q_2}{4^2} \frac{(3\hat{i} + 0\hat{j})}{\sqrt{3^2 + 0^2}}$$

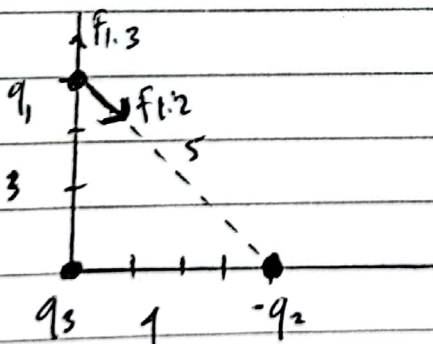
$$= K \frac{q_3 \cdot q_2}{16} \hat{i}$$

$$\vec{F}_{3,1} = K \frac{q_3 q_1}{3^2} (-\hat{j}) = -K \frac{q_3 \cdot q_1}{9} \hat{j}$$

$$\vec{F} = K \frac{q_3 \cdot q_2}{16} \hat{i} - K \frac{q_3 q_1}{9} \hat{j}$$

$$\vec{F} = K q_3 \left[\frac{q_2}{16} \hat{i} - \frac{q_1}{9} \hat{j} \right]$$

$$|\vec{F}| = K q_3 \sqrt{\left(\frac{q_2}{16}\right)^2 + \left(\frac{q_1}{9}\right)^2}$$



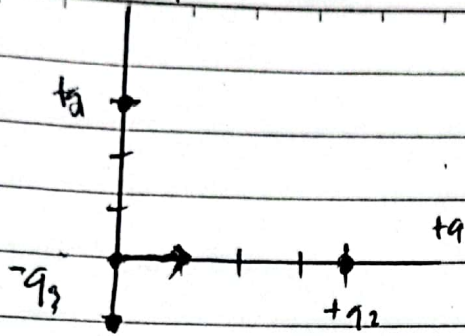
$$\vec{F}_{1,3} = K \frac{q_1 \cdot q_3}{3^2} \hat{j}$$

$$\vec{F}_{1,2} = K \frac{q_1 \cdot q_2}{5^2} \left(\frac{4\hat{i} - 3\hat{j}}{5} \right)$$

$$= 4K \frac{q_1 q_2}{125} \hat{i} - 3K \frac{q_1 q_2}{125} \hat{j}$$

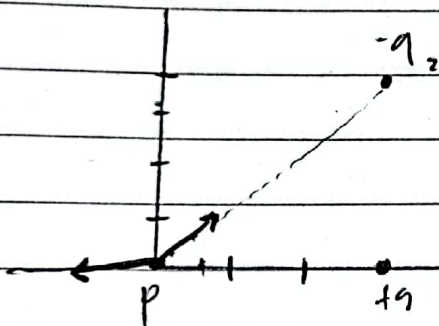
$$\vec{F} = K q_1 \left[\left(\frac{4q_2}{125} \right) \hat{i} + \frac{q_3}{9} - \frac{3q_2}{125} \hat{j} \right]$$

Medan terpengaruhi



$$\vec{E}_{q3} = \frac{\vec{E}_{3,2}}{q_3} = \frac{K q_3 q_2 / r}{q_3}$$

$$F = K \frac{q}{r^2} r$$



$$\vec{E}_1 = K \frac{q_1}{3^2} (-\hat{i})$$

$$= K \frac{q_1}{9} \hat{i}$$

$$\vec{E}_2 = K \frac{q_2}{5^2} (3\hat{i} + 4\hat{j})$$

$$= -3K \frac{q_2}{125} \hat{i} + 4K \frac{q_2}{125} \hat{j}$$

$$\vec{E} = K \left[\left(\frac{3q_2}{125} - \frac{q_1}{9} \right) \hat{i} + \frac{4q_2}{125} \hat{j} \right]$$