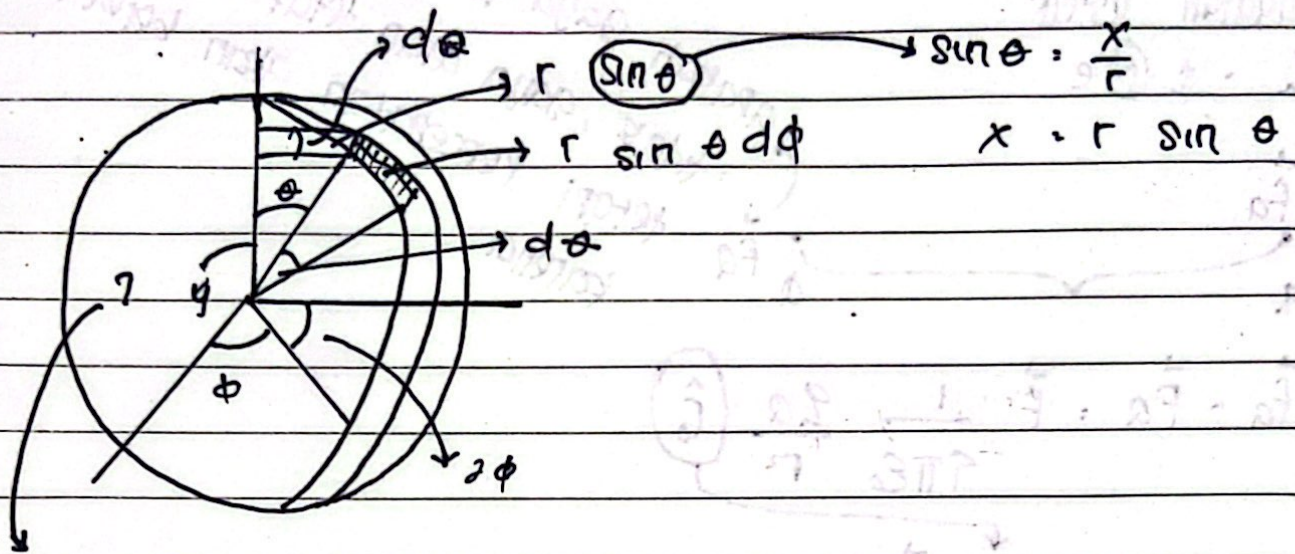


kalisma



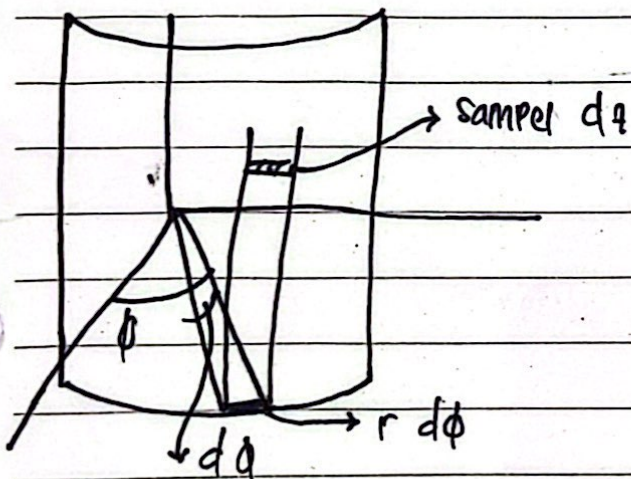
$$\cos \theta = \frac{y}{r} = y = r \cos \theta$$

$$d\phi = d\theta \times d\phi$$

$$= r d\theta r \sin \theta d\phi$$

$$= r^2 \sin \theta d\theta d\phi$$

$$dV = r^2 \sin \theta d\theta d\phi dr$$



$$A \text{ (luas)} = r d\phi dz$$

$$V \text{ (volume)} = r d\phi dz dr$$

Gaya listrik

→ muatan listrik

$$q = \pm Ne$$

apakah gaya q dan q berbeda?
= tidak, gaya akan tetap sama
tetapi percepatan akan berbeda
karena

Diagram showing two point charges, $+q$ and $-q$, with force vectors $\vec{F}_a$ and $\vec{F}_q$ acting between them. A bracket connects the two charges.

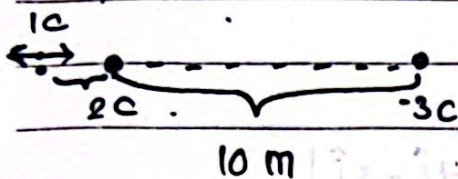
$$\vec{F}_a - \vec{F}_q = \vec{F} = \frac{1}{4\pi\epsilon_0} \frac{q_1 q_2}{r^2} \hat{r}_{12}$$

$$\hat{r}_{12} = \frac{\vec{r}}{|\vec{r}|}$$

Soal :

Kalisma

4-3-29



$$\vec{F}_{12} = \vec{F}_{13}$$

$$f_1 \cdot f_0$$

$$k \frac{1 \cdot 2}{x^2} = k \frac{1 \cdot 3}{(10+x)^2}$$

$$k \frac{9 \cdot 0}{(1+x)^2} = k \frac{9 \cdot 9}{(x^2)}$$

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

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

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

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

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

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

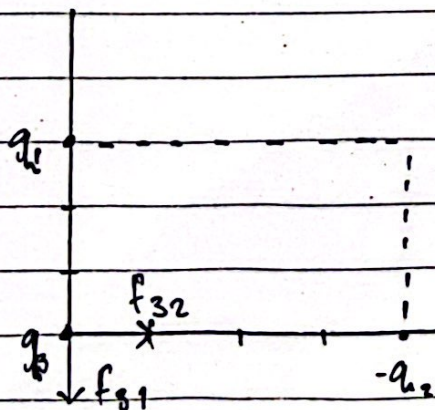
$$(x - 20)(x - 60)$$

$$= -40 \pm \sqrt{1600 + 2000}$$

$$= -40 + \sqrt{400}$$

$$= -40 + 20 = -40 - 20$$

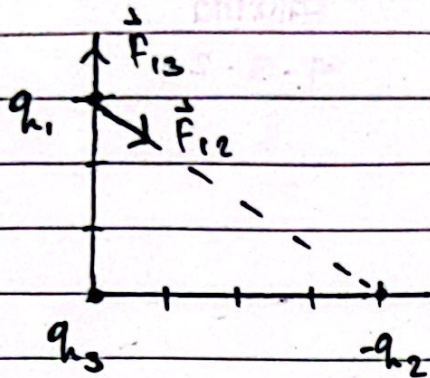
$$= -20 = -60$$



$$F_{31} = k \frac{q_3 q_1}{3^2} - \hat{j} = k \frac{q_3 q_1}{9} \hat{j}$$

$$\vec{F}_{32} = k \frac{q_3 q_2}{4^2} \frac{(3\hat{i} + 0\hat{j})}{\sqrt{3^2 + 0^2}}$$

$$= k \frac{q_3 q_2}{16}$$

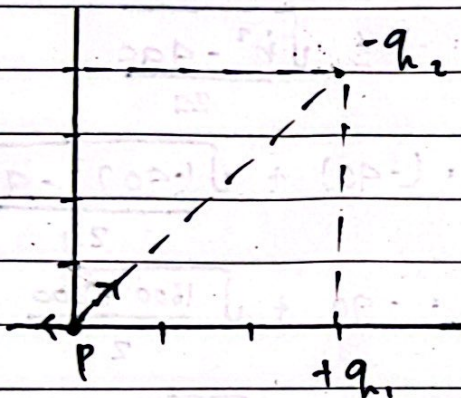


$$\vec{F}_{13} = k \frac{q_1 q_3}{3^2} \hat{j}$$

$$\vec{F}_{12} = k \frac{q_1 q_2}{5^2} \left(\frac{4\hat{i} - 3\hat{j}}{5} \right)$$

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

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



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

$$= -k \frac{q_1}{9} \hat{i}$$

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

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

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

BSK (Non discrete)