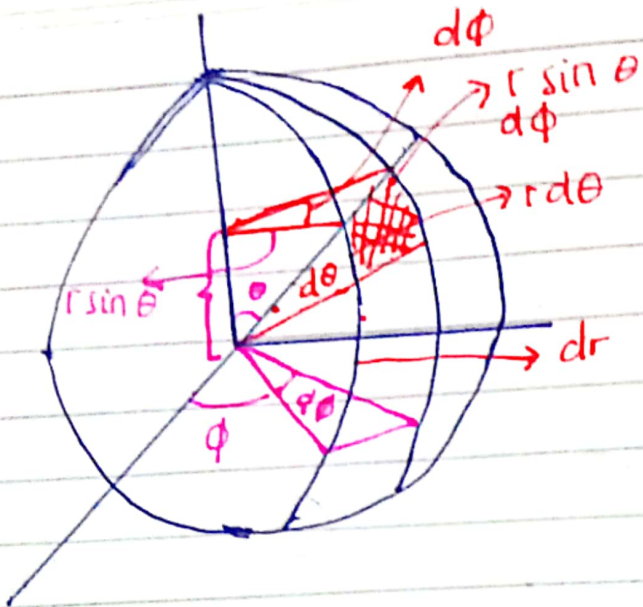


Senin, 9 Maret 2024



$$A = p \times l$$

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

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

$$V = \int_0^r \int_0^\pi \int_0^{2\pi} r^2 \sin \theta d\theta d\phi dr$$

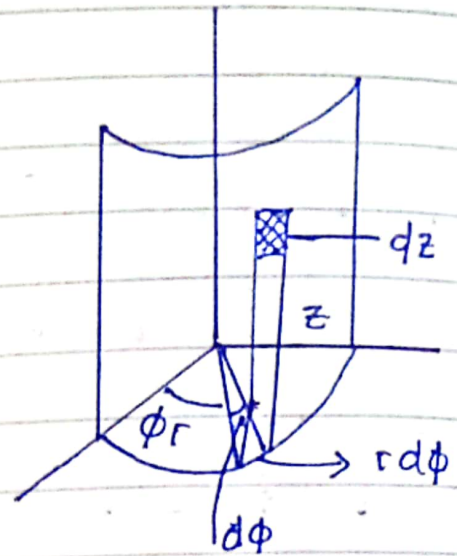
$$A = \int_0^{2\pi} \int_0^\pi r^2 \sin \theta d\theta d\phi = 4\pi r^2$$

$$A = r^2 \int_0^{2\pi} d\phi \int_0^\pi \sin \theta d\theta$$

$$= 4\pi r^2$$

$$V = \int_0^r \int_0^\pi \int_0^{2\pi} r^2 \sin \theta d\theta d\phi dr$$

$$= \frac{4}{3} \pi r^3$$

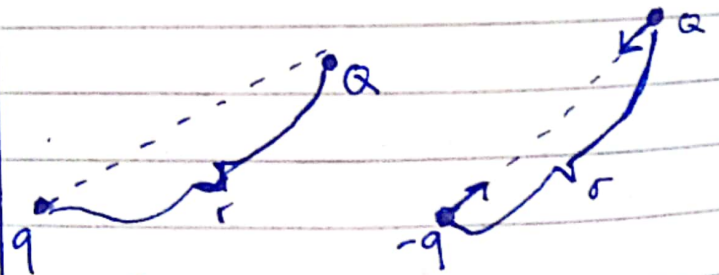


$$A = r d\phi dz$$

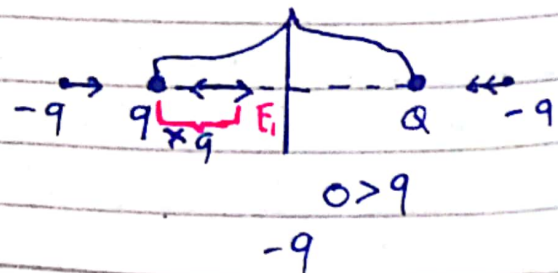
$$V = \int_0^r \int_0^{2\pi} \int_0^h r d\phi dz dr$$

→ kegunaannya untuk menarik

$$q = \pm Ne$$



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

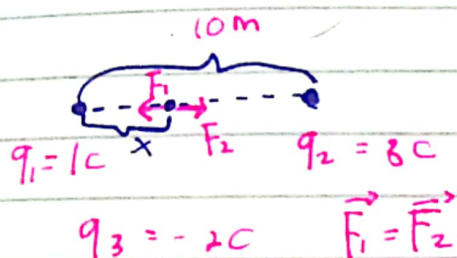


$$\vec{F}_1 = \vec{F}_2$$

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

Contoh:

①



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

$$= \frac{1}{x^2} = \frac{3}{(10-x)^2}$$

$$= \frac{1}{x^2} = \frac{3}{(10-x)^2}$$

$$(10-x)^2 = 3x^2$$

$$100 - 20x + x^2 = 3x^2$$

$$2x^2 + 20x - 100 = 0$$

$$x^2 + 10x - 50 = 0 \quad (a=1, b=10, c=-50)$$

$$c = -50$$

$$(x+15)(x-5) = 0$$

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

$$2a$$

$$x = \frac{-10 \pm \sqrt{10^2 - 4(1)(-50)}}{2(1)}$$

$$2(1)$$

$$x = \frac{-10 \pm \sqrt{100 + 200}}{2}$$

$$x = \frac{-10 \pm \sqrt{300}}{2}$$

$$x = \frac{-10 \pm 10\sqrt{3}}{2}$$

$$x = \frac{-10 + 10\sqrt{3}}{2}$$

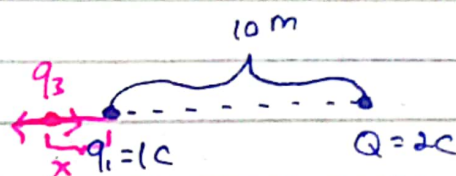
$$x = \frac{-5 + 5\sqrt{3}}{1} \quad x = \frac{-5 - 5\sqrt{3}}{1}$$

$$x = -5 + 5\sqrt{3} \quad x = -5 - 5\sqrt{3}$$

$$= 3.66 \quad = -13.6$$

$$x = \frac{-10 - 10\sqrt{3}}{2}$$

②



$$q_3 = 1C$$

$$\vec{F}_1 = \vec{F}_2$$

$$k = \frac{q_1 q_3}{x^2} = k \frac{q_3 q_2}{(10+x)^2}$$

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

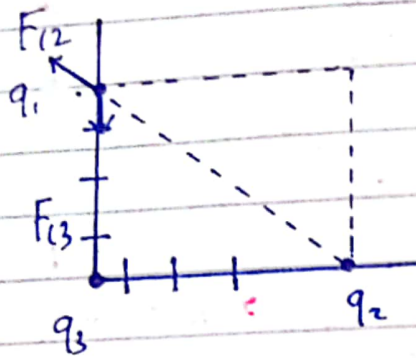
$$2x^2 = (10+x)^2$$

$$2x^2 = 100 + x^2 + 20x$$

$$2x^2 - x^2 - 20x - 100 = 0$$

$$x^2 - 20x - 100 = 0$$

③ Carilah gaya dari q_1



$$F_{13} = k \frac{q_1 q_3}{r^2} (-\hat{j})$$

$$\frac{(0\hat{i} - 3\hat{j})}{\sqrt{0^2 + 3^2}} = \frac{-3\hat{j}}{3} = -\hat{j}$$

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