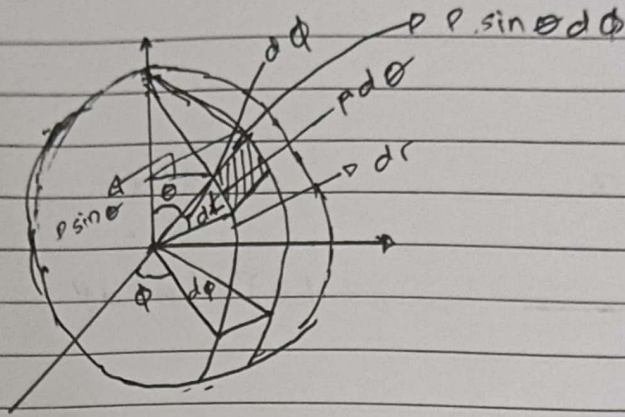


21 Maret 2024



$$A = P \times d$$

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

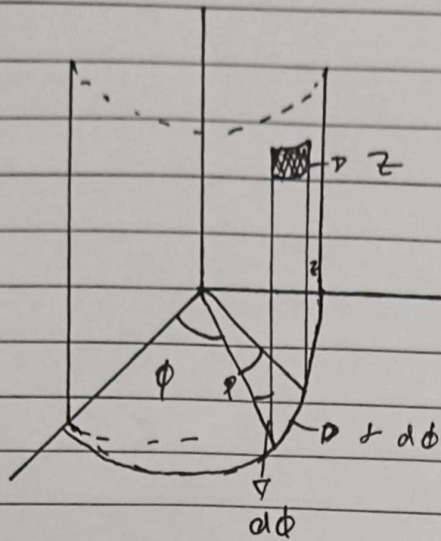
$$= P^2 \sin \theta d\theta d\phi$$

$$V = P^2 \sin \theta d\theta d\phi$$

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

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

$$V =$$

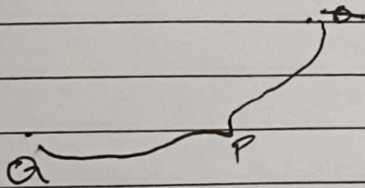


$$A = r^2 \sin \theta d\theta d\phi$$

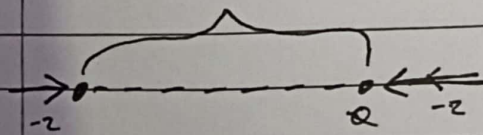
$$V = \int r^2 \sin \theta dr d\theta d\phi$$

Listrik Statis

$$Q = + n e$$



$$\vec{P} = \frac{1}{4\pi\epsilon_0}$$

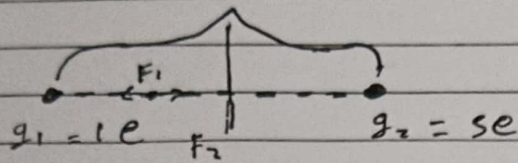


$$F_1 = F_2$$

$$K = \frac{2Q}{(r-x)^2} = K \frac{2Q}{x^2}$$



Contoh soal



$$q_3 = -2e$$

Quest

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

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

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

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

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

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

$$x^2 + 10x - 50 = 0$$

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

$$x = 5$$

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

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

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

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

$$\frac{-10 + 10\sqrt{3}}{2} = -5 + 5\sqrt{3} = -13.5$$

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

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

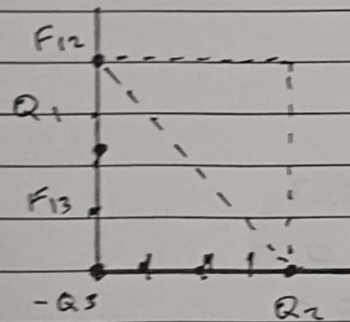
$$\frac{1}{x^2} = \frac{2}{(10+x)^2}$$

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

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

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

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



$$F_{12} = k \frac{Q_1 Q_2}{5^2} \left(\frac{-4\hat{i} + 3\hat{j}}{5} \right)$$

$$F = k \frac{Q_1 Q_3}{3^2} (-\hat{j})$$