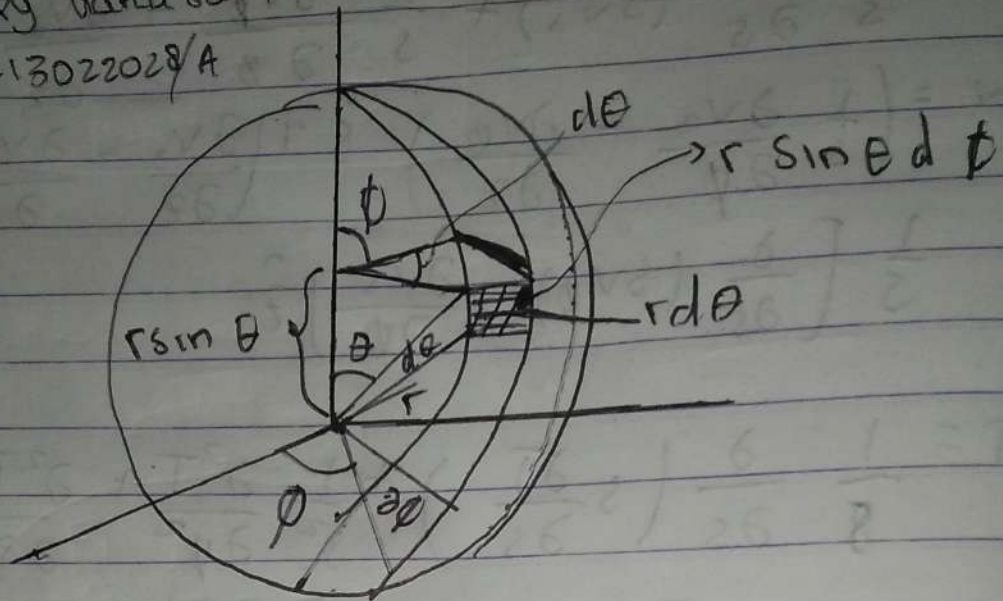


Pak Wadis

Perry handa Sar

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$$A = P \times L$$

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

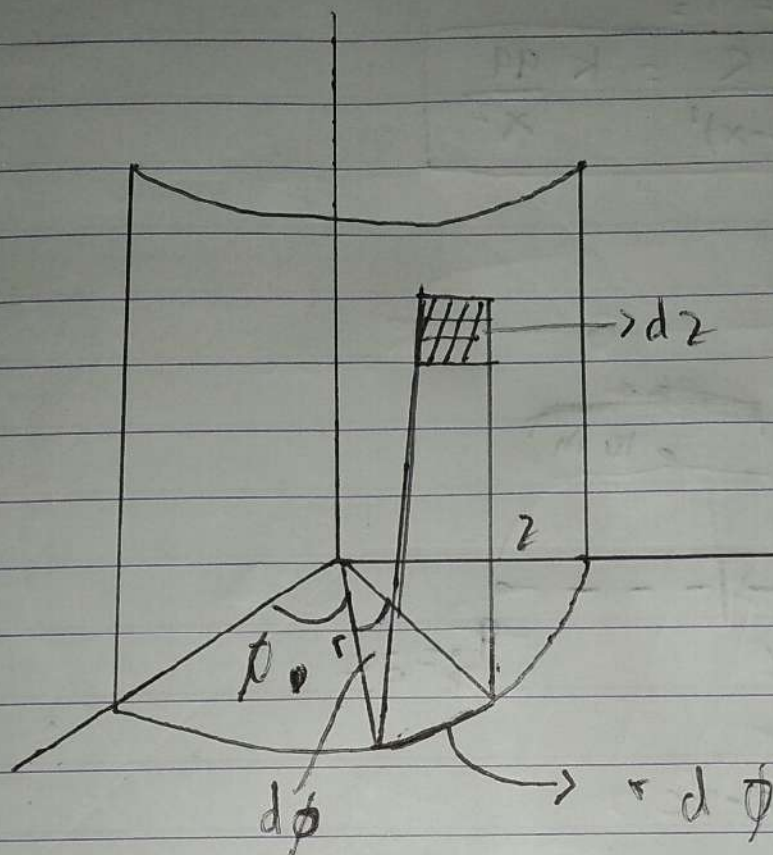
$$= r^2 \sin \theta d\theta d\phi$$

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

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

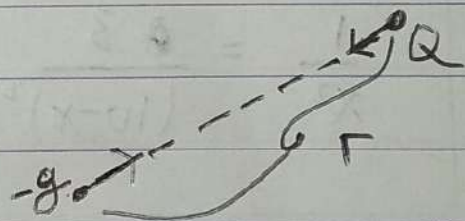
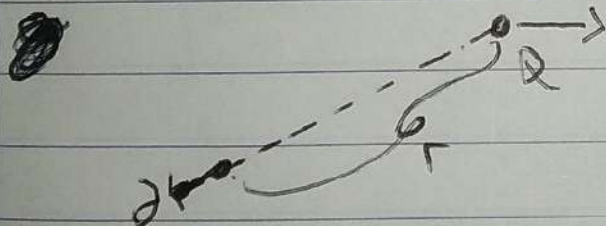
$$A = r^2 \int_0^{2\pi} d\phi \int_0^\pi \sin \theta d\theta = 4\pi r^2$$

$$V = \int_0^r \int_0^{2\pi} \int_0^\pi r^2 \sin \theta d\theta d\phi = \frac{4}{3} \pi r$$

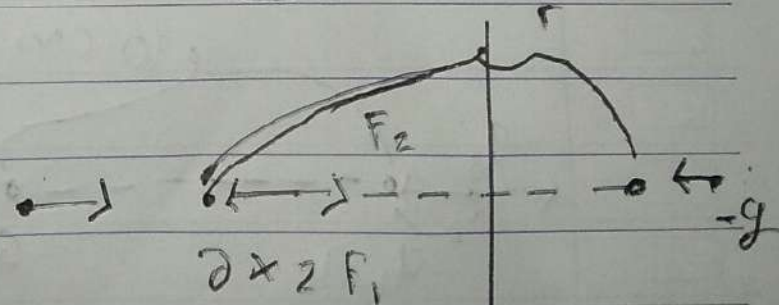


$$A = r \theta \phi dz$$

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



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



$$F_1 = F_2$$

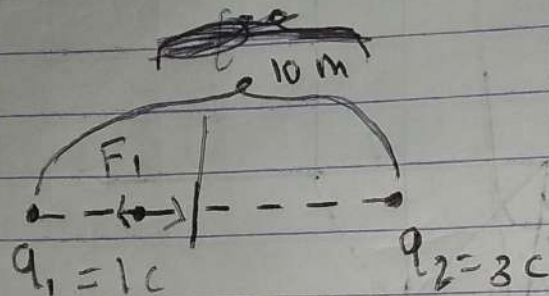
$$Q > q$$

$$k \frac{\partial Q}{(1-x)^2} = k \frac{\partial q}{x^2}$$

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

$$k \frac{qQ}{(1-x)^2} = k \frac{qQ}{x^2}$$

Soln.

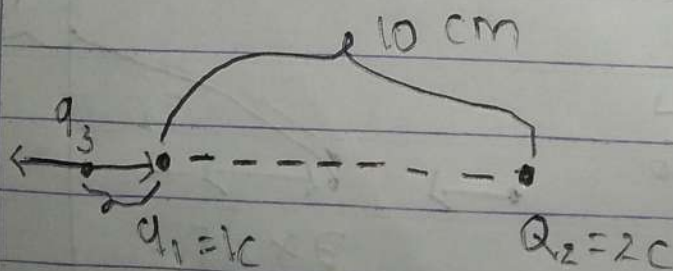


$$q_3 = -2C$$

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

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

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



$$q_3 = -1C$$

No. _____

Date: _____

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

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

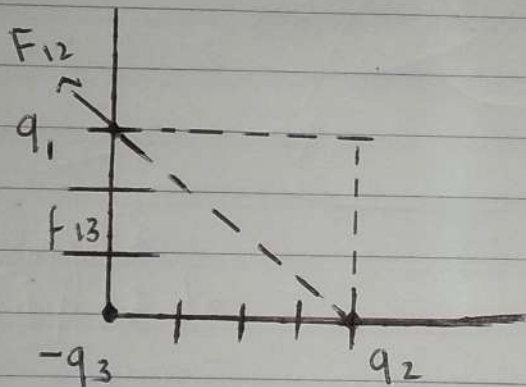
$$\frac{1}{x^2} = \frac{2}{(10+x)^2}$$

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

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

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

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



$$F = k \frac{q_1 q_3}{3^2} (-\hat{j})$$

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

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