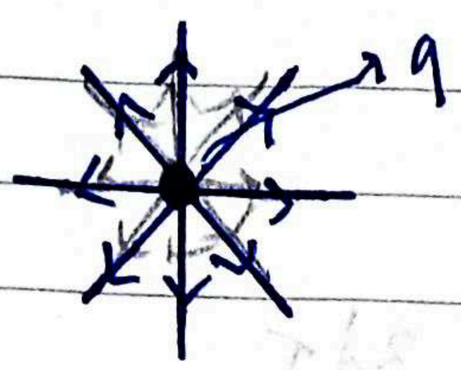
No. Senin

Date 22 . 04 . 2024

Kelistrikan dan Kemagnetan.

Usaha dan Energi



$$W = \int_A^B \vec{F} \cdot d\vec{l}$$

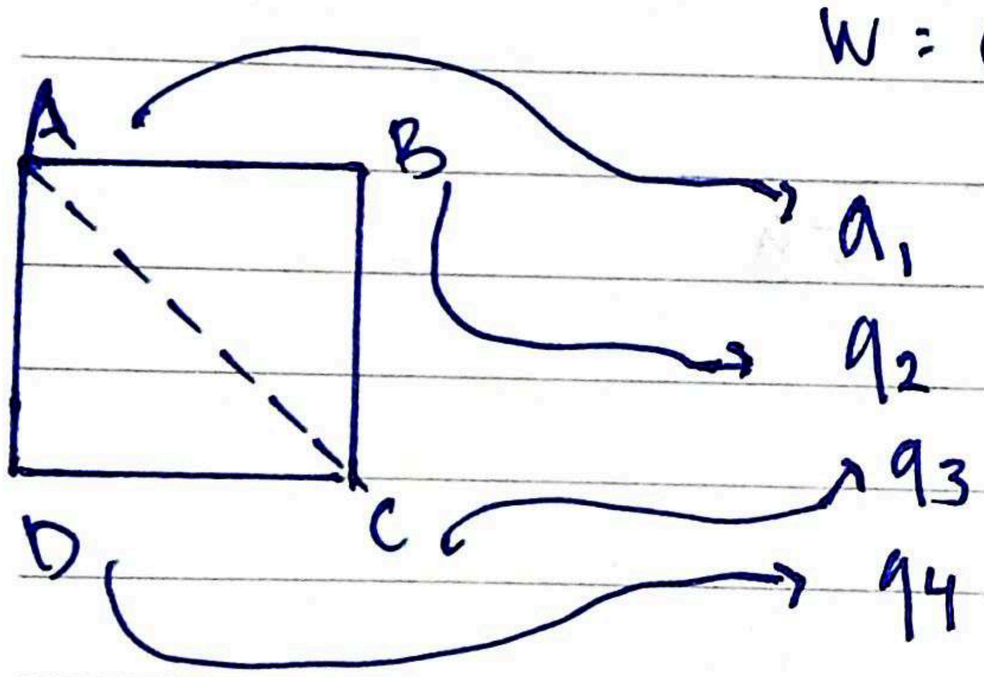
$$= -q \int \vec{E} \cdot d\vec{l} \qquad dr$$

$$= -q \int \frac{q}{4\pi\varepsilon_0} \frac{q}{r^2} dr$$

$$W = -q \left[\frac{q}{4\pi\varepsilon_0 r} \right]$$

$$= q[V]$$

$$W = QV$$



* $W_1 = q_1 V_1 = 0$
* $W_2 = q_2 V_2 = q_2 \left[K \frac{q_1}{r} \right]$
* $W_3 = q_3 V_3 = q_3 \left[K \frac{q_1}{r_1} + K \frac{q_2}{r_2} \right]$
* $W_4 = q_4 V_4 = q_4 \left[K \frac{q_1}{r} + K \frac{q_2}{\sqrt{2}r} + K \frac{q_3}{r} \right]$

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$$W = \frac{1}{2}\sum_{i=1}^{n} q_i V_i$$

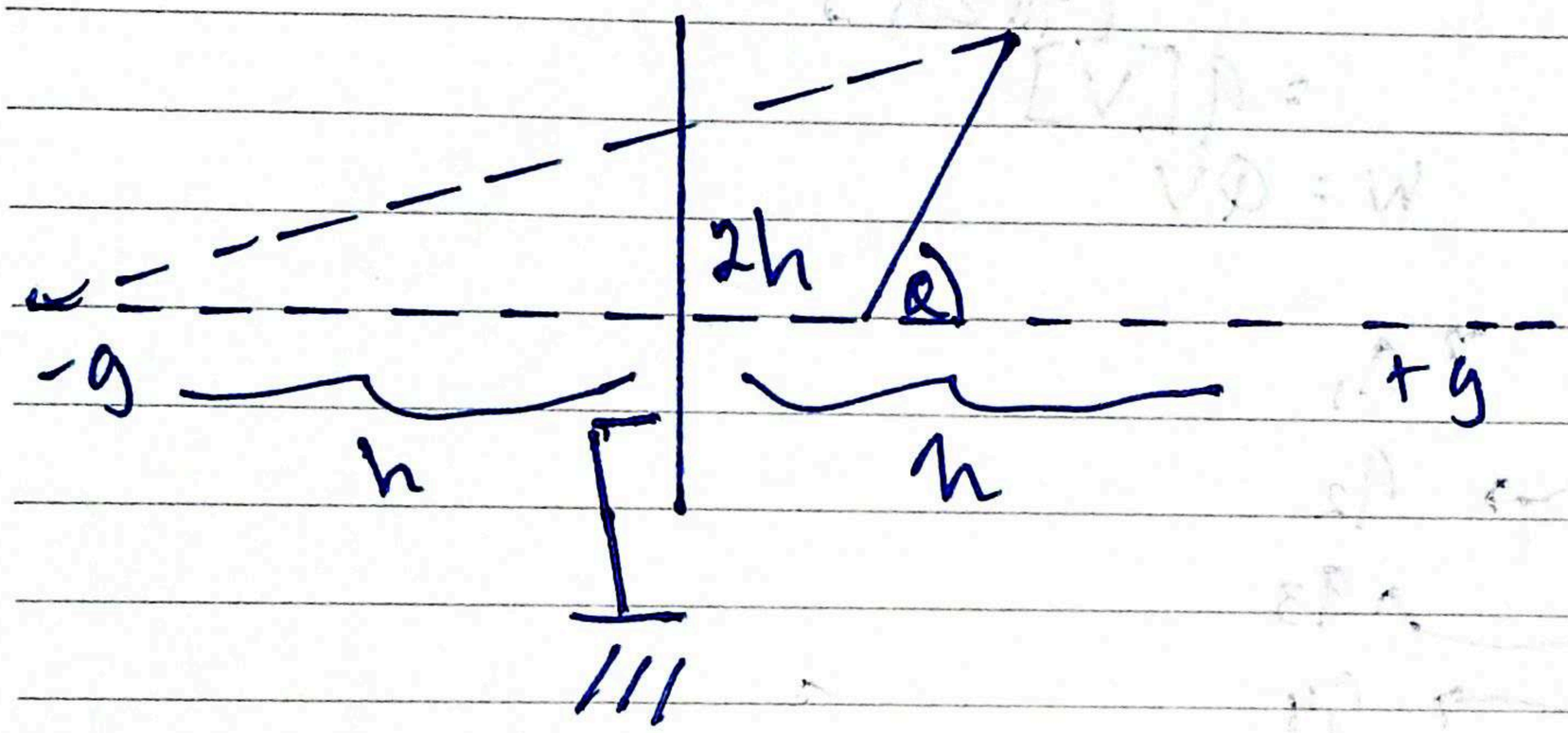
$$W = \frac{1}{2}\int \lambda V dl$$

$$W = \frac{1}{2}\int \rho V d\tau$$

$$P = \varepsilon_0 (\nabla \cdot \vec{E})$$

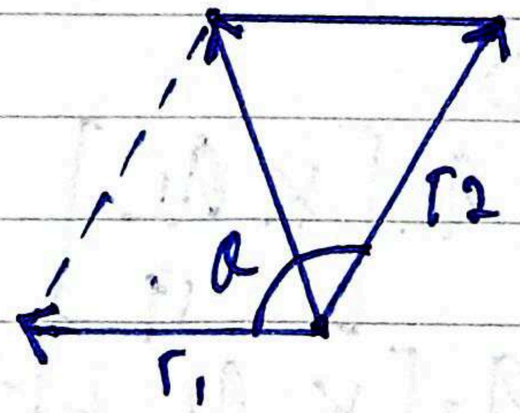
$$\nabla \cdot \vec{E} = \frac{\rho}{\varepsilon_0}$$

$$W = \frac{\varepsilon_0}{2}\int \vec{E}^2 d\tau$$



$$P = \frac{1}{4\pi\varepsilon_0}\frac{1}{r} + \frac{-1}{4\pi\varepsilon_0 r'}$$

$$= \frac{1}{4\pi\varepsilon_0}\left[\frac{1}{r} - \frac{1}{r'}\right]$$



$$r' = (r^2 + 4h^2 + 4h + \cos\theta)^{1/2}$$

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$$\frac{dv}{dp} = k\left[\frac{1}{r}\,\frac{1}{(r^2+4h^2+4hr\cos\theta)^{\frac{1}{2}}}\right]$$

$$= k\left[\frac{1}{r^2} - \frac{\frac{1}{2}(r^2+4h^2+4hr\cos\theta)^{-1/2}(2r+4h\cos\theta)}{(r^2+4h^2+4hr\cos\theta)}\right]$$