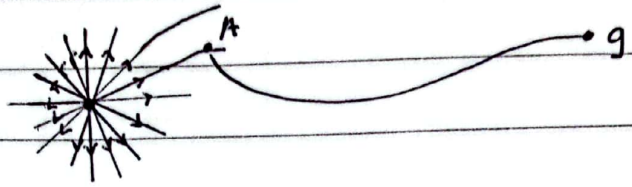
SHELVA YULITA SARI (2213022077)

Kelistrikan

DATE. 22 / 04 / 2024

Usaha dan Energi



kapa kenapa Q. karena harus menetralkan

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

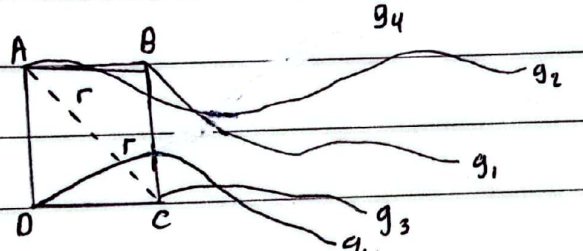
$$= -q \int \vec{E} \, d\ell \quad (d\ell = dr)$$

$$= -q \left[\int \frac{1}{4\pi\varepsilon_0} \frac{q}{r^2} \, dr \right]$$

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

$$= Q\,[V]$$

$$W = QV$$



$W_1 = q_1 V_1 = 0$

$W_2 = q_2 V_2 = q_2 \left[k \frac{q_1}{r_1} \right]$

$W_2 = q_2 V_2$

$W_3 = q_3 V_3$

$= q_3 \left[k \frac{q_1}{p_1} + k \frac{q_2}{p_2} \right]$

$W_4 = q_4 V_4 = q_4 \left[k \frac{q_1}{r} + k \frac{q_2}{\sqrt{2}p} + k \frac{q_3}{p} \right] = q_5 \left[\right.$

$W_{total} = W_1 + \quad + \quad + W$

$= k \frac{q q_2}{p} + k \frac{q \cdot q \cdot q}{p} + k \frac{q_2 q_4}{p} + \cdots$

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

$$W = \frac{1}{4\pi\varepsilon_0} \sum_{i}^{n} \sum_{j}^{m} \frac{q_i q_j}{p_{ij}}$$

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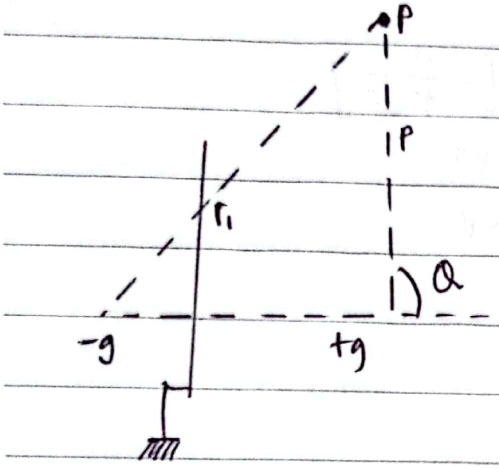
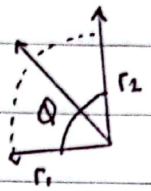
$$W = \frac{1}{2}\sum_{i=1}^{n} g_i v_i$$

$$W = \frac{1}{2}\int x\, v\, dp$$

$$W = \frac{1}{2}\int \sigma V\, ds$$

$$W = \frac{1}{2}\int \rho v\, dG$$





$$V_1 = \frac{1}{4\pi\varepsilon_0}\frac{q}{r} + \frac{-q}{4\pi\varepsilon_0 r'}$$

$$V_1 = \frac{q}{4\pi\varepsilon_0}\left[\frac{1}{r} - \frac{1}{r'}\right]$$

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

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

$$E_r = \frac{\partial V}{\partial r} = \frac{1}{4\pi\varepsilon_0}\left[\frac{1}{r^2} - \frac{r + 2h\cos\theta}{r^3}\right]$$

$$E_\theta = \frac{1}{r}\frac{\partial V}{\partial \theta} = \frac{q}{4\pi\varepsilon_0}\left[\frac{2h\cos\theta}{r^3}\right]$$

$$E_2 = E_r\cos\theta - E_\theta\sin\theta$$