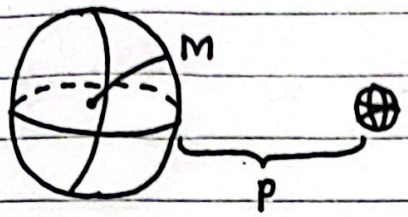
Kalisma

No Senin
Date 1 April 2024

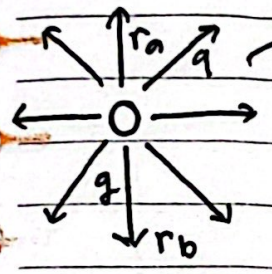
Potensial Listrik (Elektrik Potential)



$W = G\frac{Mm}{r}$ | $V = \frac{W}{M} = G\frac{M}{r}$

$V = G\frac{M}{P}$ | $V = \frac{W}{g} = \frac{F \cdot r}{g}$

$V = \frac{M}{W}$ | $V = \frac{W}{g}$



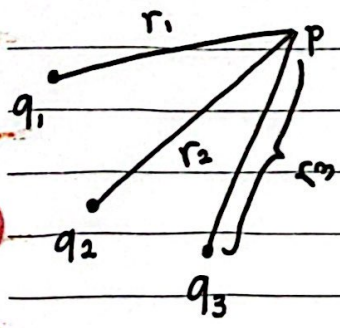
$\int_a dv = -\int \vec{E} \cdot dr$

$\int_{\infty}^{Q} \Delta V \quad \boxed{V = K\frac{q}{r}}$

$V\Big|_a^b = -\int \frac{1}{4\pi\varepsilon_0}\frac{q}{r^2}\,dr$

$= -\frac{q}{4\pi\varepsilon_0 r_a}\int_{r_a}^{r_b}\frac{1}{r^2}\,dr = \frac{-q}{4\pi\varepsilon_0}\left(-\frac{1}{r}\Big|_{r_a}^{r_b}\right)$

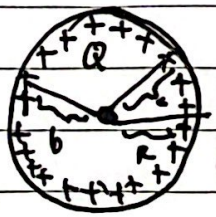
$= V_b - V_a = \frac{q}{4\pi\varepsilon_0}\left(\frac{1}{r_b} - \frac{1}{r_a}\right)$



$V_p = K\left[\frac{q_1}{r_1} + \frac{q_2}{r_2} + \frac{q_3}{r_3}\right]$

$= K\sum_{i=1}^{n}\frac{q_i}{r_i}$

$V = \frac{W}{g} = \frac{\vec{P}\cdot\vec{s}}{q} = \boxed{K\frac{q}{r}}$



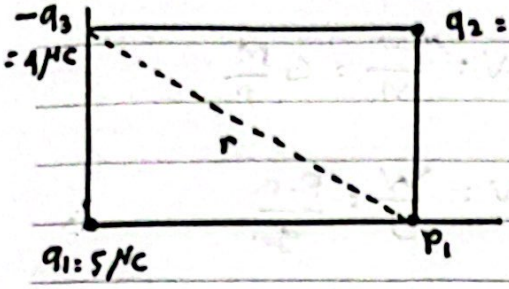
$V_b - V_a = \frac{q}{4\pi\varepsilon_0}\left(\frac{1}{r_b} - \frac{1}{r_a}\right)$ (q → 0)

$\boxed{V_b - V_a = K\frac{Q}{R}}$

No
Date

Soal

1) Gambarkan kasusnya



$$V = \frac{Kq_1}{r_1} + \frac{Kq_2}{r_2} + \frac{K(-q_3)}{r_3}$$

$$= K\left(\frac{5}{8} + \frac{5}{8} + \frac{(-4)}{\sqrt{8^2+8^2}}\right)$$

$$= K\left(\frac{5}{8} + \frac{5}{8} + \frac{(-4)}{\sqrt{128}}\right)$$

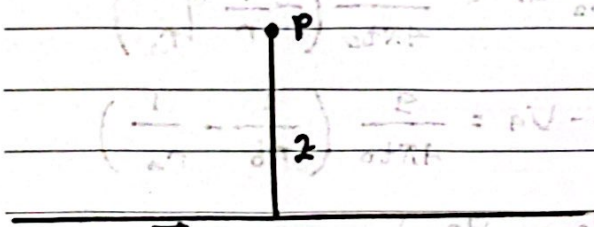
$$E = -\nabla V$$

$$\nabla . E = -\nabla^2 V$$

$$\nabla . E = \frac{\rho}{t_o}$$

$$\nabla^2 V = \frac{-\rho}{t_o} \text{ poison.}$$

$$\nabla^2 V = 0 \text{ Laplace.}$$



$$\vec{E} = \frac{\lambda}{2\pi t_o r}$$

$$\oint \vec{E}\, da = \frac{\lambda . \ell}{t_o}$$

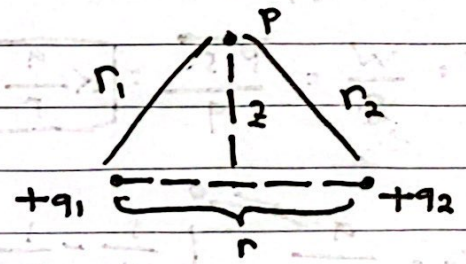
$$\vec{E}(2\pi r \ell) = \frac{\lambda . \ell}{t_o}$$

$$\boxed{\vec{E} = \frac{\lambda}{2\pi t_o r}}$$

$$V = \int \vec{E}\, dr$$

$$= -\int \frac{\lambda}{2\pi t_o} \frac{1}{r} dr$$

$$= -\frac{\lambda}{2\pi t_o} \int \frac{1}{r} dr$$



$$V_p = K\left[\frac{q_1}{\sqrt{(tr)^2 + z^2}} + \frac{q_2}{\sqrt{(tp^2) + z^2}}\right]$$