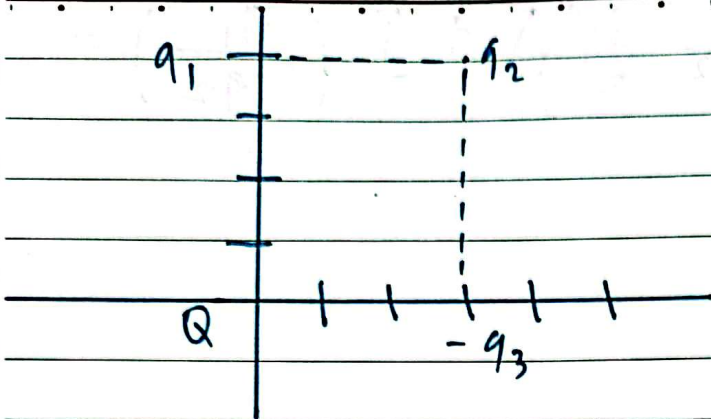


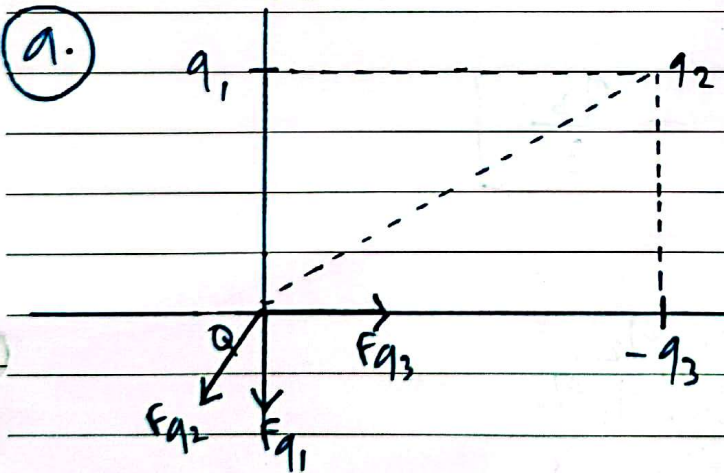
Nama : Desta Ayu Iestari
NPM : 2353022001

No 21.02.2025
Date



- Hitung medan listrik di titik $(0,0)$
- Hitung daya listrik di titik $(0,0)$
- Hitung potensial listrik di titik $(0,0)$
- Hitung usaha untuk memindahkan ke-4 muatan tersebut!

Jawaban:



$$\vec{E}_p = k \left[\frac{q_1}{4^2} (-\hat{j}) + \frac{q_2}{5^2} \left(\frac{-3\hat{i} - 4\hat{j}}{5} \right) + \frac{q_3}{3^2} (\hat{i}) \right]$$

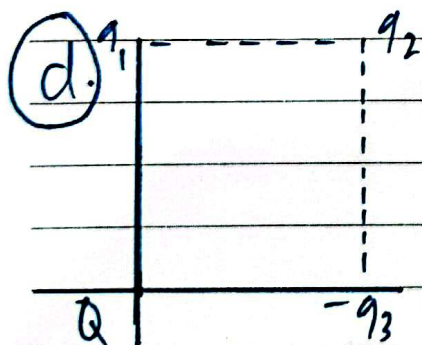
$$F_Q = kQ \left(\frac{q_1}{4^2} (-\hat{j}) + \frac{q_2}{5^2} \left(\frac{-3\hat{i} - 4\hat{j}}{5} \right) + \frac{q_3}{3^2} (\hat{i}) \right)$$

$$= kQ \left(\hat{i} \left(\frac{q_3}{3^2} \right) - \left(\frac{q_2}{5^2} \frac{3}{5} \right) \right) + \hat{j} \left(\frac{q_1}{9^2} - \left(\frac{q_2}{5^2} \left(\frac{4}{5} \right) \right) \right)$$

$$W_{\text{total}} = W_1 + W_2 + W_3 + W_4$$

$$= 0 + \left(k \frac{q_1 q_2}{3} \right) + \left(k \frac{q_1 q_3}{5} + k \frac{q_2 q_3}{4} \right) + \left(k \frac{q_1 q_4}{4} + k \frac{q_2 q_4}{5} + k \frac{q_3 q_4}{3} \right)$$

$$\textcircled{c}. V_p = k \left[\frac{q_1}{4} + \frac{q_2}{5} - \frac{q_3}{3} \right]$$



$$W_1 = 0$$

$$W_2 = V_1 \cdot q_2 = k \cdot \frac{q_1 q_2}{3}$$

$$W_3 = V_1 \cdot q_3 + V_2 \cdot q_3 = k \frac{q_1 q_3}{5} + k \frac{q_2 q_3}{4}$$

$$W_4 = V_1 \cdot q_4 + V_2 \cdot q_4 + V_3 \cdot q_4$$

$$= k \frac{q_1 q_4}{4} + k \frac{q_2 q_4}{5} + k \frac{q_3 q_4}{3}$$