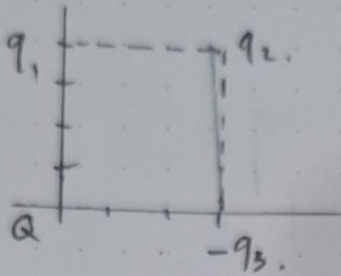
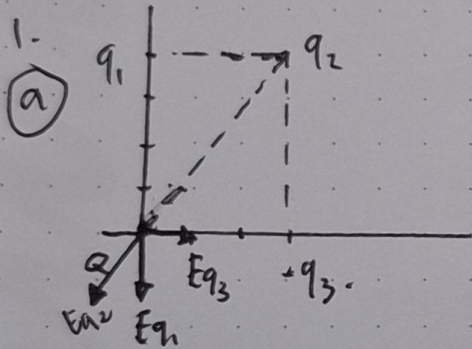


Suci Awahyah
2313022047

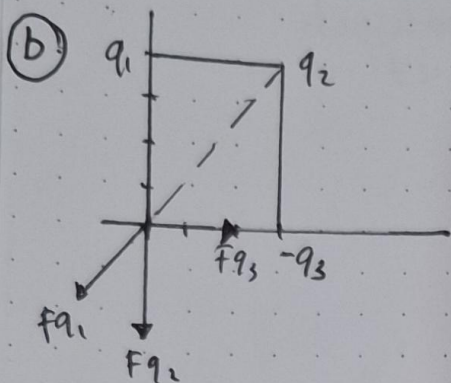


- Hitung medan listrik titik (0,0)
- Hitung gaya listrik
- Hitung Potensial listrik.
- Hitung usaha untuk memindahkan ke 4 muatan.

Jawab.



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

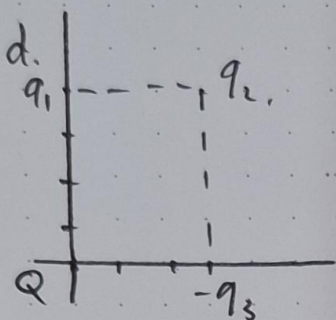


$$F_Q = kQ \left[\frac{q_1}{4^2} (-\hat{j}) + \frac{q_2}{5^2} \left(\frac{-3\hat{i} - 4\hat{j}}{5} \right) + \frac{q_3}{3^2} \hat{i} \right]$$

$$= kQ \left[\hat{i} \left(\left(\frac{q_2}{5^2} \right) \left(\frac{-3}{5} \right) \right) + \hat{j} \left(\left(\frac{q_1}{4^2} \right) \left(-1 \right) + \left(\frac{q_2}{5^2} \right) \left(\frac{-4}{5} \right) \right) \right]$$

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

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



$$W_1 = 0$$

$$W_2 = V_1 \cdot q_2$$

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

$$W_3 = V_1 \cdot q_3 + V_2 \cdot q_3$$

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

:

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

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

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

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