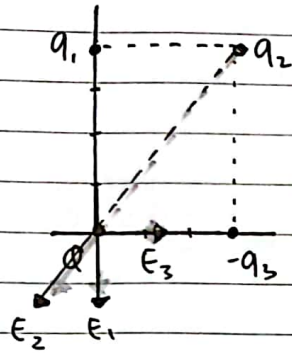


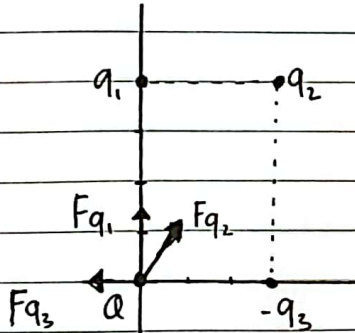
Tri Sulistiwati

a. Hitung medan listrik di titik (0,0)



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

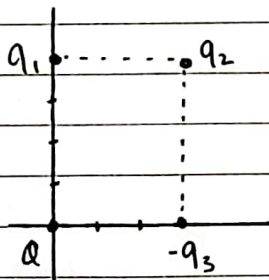
b. Hitung gaya listrik di titik (0,0)



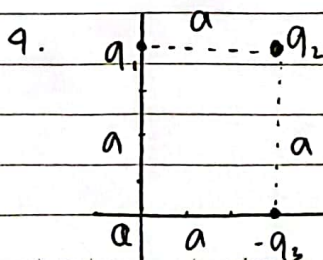
$$F_Q = kQ \left(\frac{q_1}{4^2} (\hat{j}) + \frac{q_2}{5^2} \left(\frac{-3\hat{i} + 4\hat{j}}{5} \right) + \frac{q_3}{3^2} (\hat{i}) \right)$$

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

c. Hitung Potensial listrik di titik (0,0)



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



$$W_1 = 0$$

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

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

$$\begin{aligned} W_q &= U_1 \cdot q_1 + U_2 q_1 + U_3 q_1 \\ &= k \frac{q_1 q_1}{r} + k \frac{q_1 q_1}{5} + k \frac{q_1 q_1}{3} \end{aligned}$$