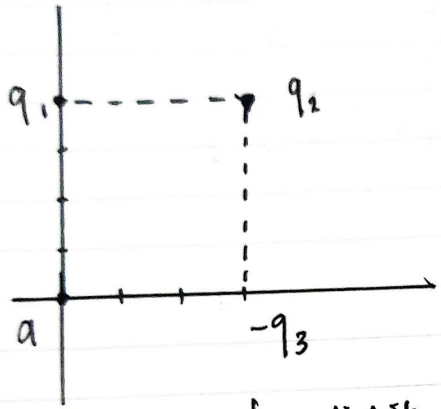
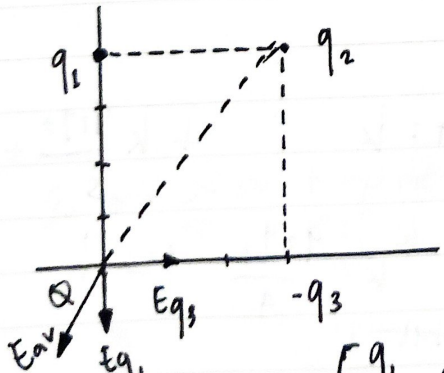
Nama : Mia Dwi Manggarani
NPM : 2313022019



a. Hitung medan listrik di titik (0,0)
b. Hitung gaya listrik di titik (0,0)
c. Hitung potensial listrik di titik (0,0)
d. Hitung usaha untuk memindahkan ke 4 muatan tsb!

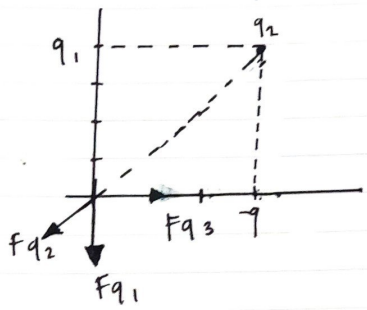
Jawab :



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

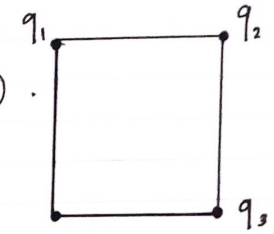
(b) $F_Q = kQ\left(\frac{q_1}{4^2}(-\hat{j}) + \frac{q_2}{5^2}\left[\frac{-3i-4j}{5}\right] + \frac{q_3}{3^2}(i)\right]$

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



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

(d)



$W_1 = 0$

$W_2 = V_1 \cdot q_2$

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

$W_3 = V_1 \cdot q_3 + V_2 q_3$

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