No.

Date

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NPM : 2013022030
Prodi : Pendidikan Fisika (B)

Pemecahan Kasus

Kasus Muatan Listrik

① $N = (5 - 0{,}8) \cdot \frac{(6{,}02 \times 10^{23})}{107{,}9} + 0{,}8 \frac{(6{,}02 \times 10^{23})}{197}$

$= 2{,}34 \times 10^{22} + 2{,}44 \times 10^{21}$

$\simeq 2{,}58 \times 10^{22}$

Karena atom Ag mempunyai 47 elektron dan Au mempunyai 79 elektron maka jumlah kedua atom adalah 126 elektron.
Jumlah medan total Φ adalah :

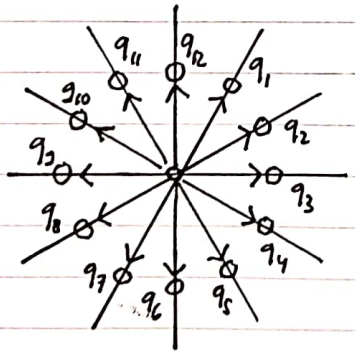
$\Phi = (2{,}58 \times 10^{22} \text{ atom})(126 \text{ elektron})(1{,}6 \times 10^{-19} \text{ C / elektron})$

$= 5{,}2 \times 10^{5} \text{ C}$

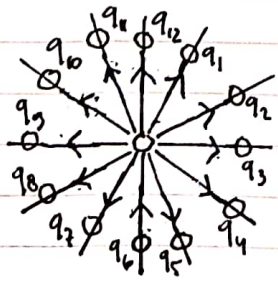
Jadi, pada cincin 5 gr terdapat muatan $5{,}2 \times 10^{5}$ C, dimana pada cincin 5 gr terdapat $\frac{5{,}2 \times 10^{5} \text{ C}}{1{,}6 \times 10^{-19}} = 3{,}25 \times 10^{24}$ elektron.

Kasus gaya listrik

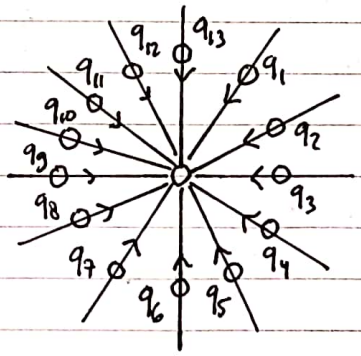
(a)



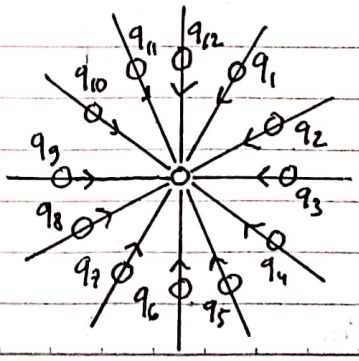
(b)



(c)



(d)



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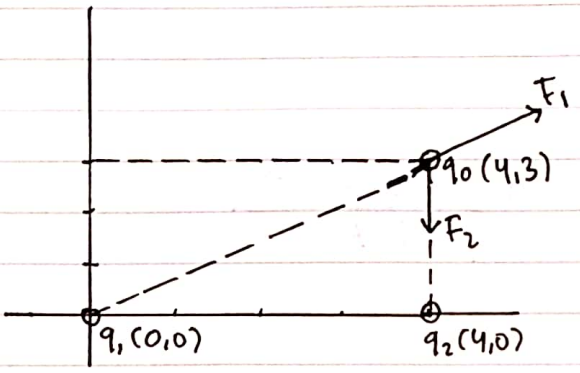
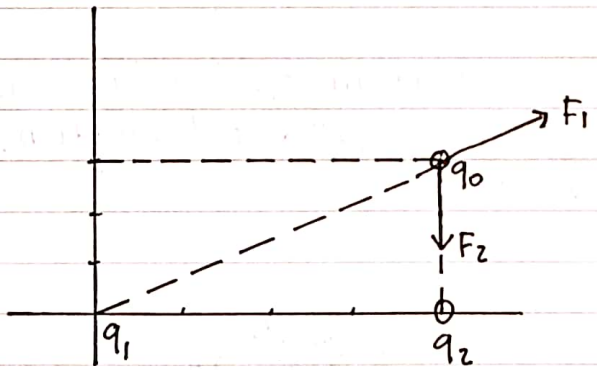
(e.) $q_1 = 25\,\mu C \rightarrow (0,0)$
$q_2 = -10\,\mu C \rightarrow (4,0)$
$q_0 = 10\,\mu C \rightarrow (4,3)$

Carilah gaya total pada q_0 akibat q_1 dan q_2.



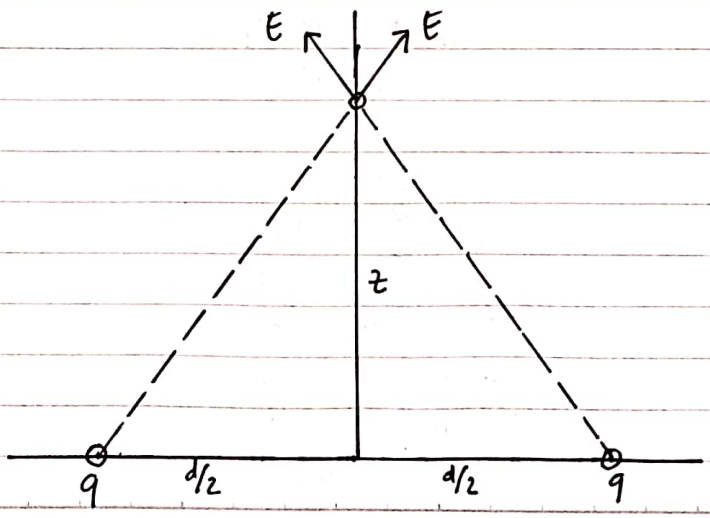
(f.) $q_1 = +25\,\mu C \rightarrow (0,0)$
$q_2 = -15\,\mu C \rightarrow (4,0)$
$q_0 = +20\,\mu C \rightarrow (4,3)$

Carilah gaya pada q_0



Kasus Medan Listrik

(a.)



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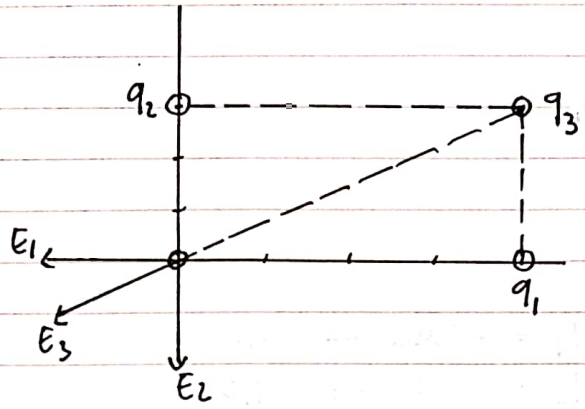
(b.) $q_1 = 2C \rightarrow (4,0)$ Tentukan medan listrik di (0,0)

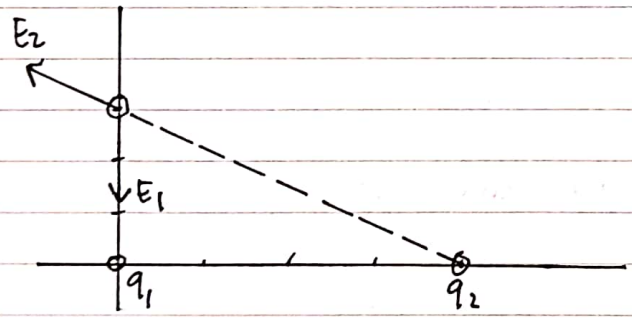
$q_2 = 5C \rightarrow (0,3)$

$q_3 = 10C \rightarrow (4,3)$



(c.) $q_1 = -5\,\mu C \rightarrow (0,0)$ Hitung medan di (0,3)

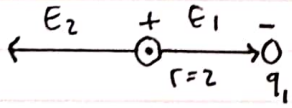
$q_2 = 10\,\mu C \rightarrow (4,0)$



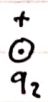
(d.) $q_1 = -25\,\mu C$ Besar dan arah medan listrik 2 cm.

$q_2 = 80\,\mu C$

$r = 10$ cm



r = 10 cm



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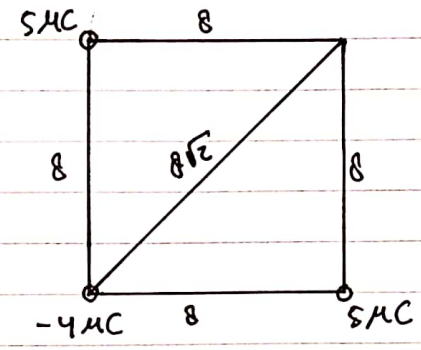
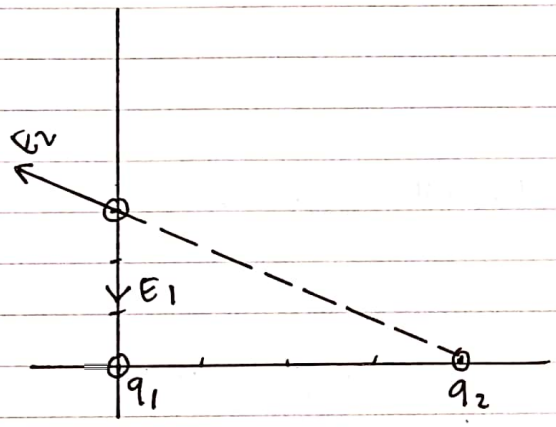
Potensial listrik

①



②



$q_1 = -5\,\mu C \rightarrow (0,0)$
$q_2 = 10\,\mu C \rightarrow (4,0)$

③ $q_1 = +25\,\mu C \rightarrow (0,0)$
$q_2 = -15\,\mu C \rightarrow (4,0)$
$q_0 = +20\,\mu C \rightarrow (4,3)$ carilah titik (0,3)