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NPM : 2013022018
Prodi : Pendidikan Fisika

Pemecahan

1. Seorang putri memakai cincin dari perak $^{107,9}_{47}Ag$ 4,12 gram. dan dilapisi emas $^{197}_{79}Au$ 0,8 gr. Berapa jumlah elektron dalam cincin putri tsb.

Jawab:

o> Jumlah atom = N

$$N = \frac{Na \times \text{massa (gr)}}{Mr}$$

$$N_{tot} = \frac{Na \times \text{massa. Ag}}{Mr\ Ag} + \frac{Na \times \text{massa Au}}{Mr.\ Au}$$

$$= \frac{6,02 \cdot 10^{23} \times 4,2}{107,9} + \frac{6,02 \cdot 10^{23} \times 0,8}{197}$$

$$= 234\ 10^{22} + 2,44 \cdot 10^{21}$$

$$= 2,58 \cdot 10^{22}$$

o>. Muatan total (Q).

Karena Ag punya 47 elektron. Dan Au 79 elektron maka jumlah elektron atom tersebut 126 elektron.

$$Q = N \times \text{jumlah elektron} \times e$$

$$= 2,58 \cdot 10^{22} \times 126 \times 1,6 \cdot 10^{-19}$$

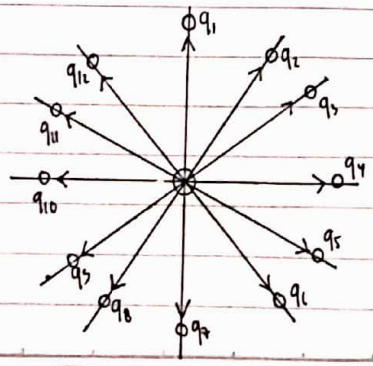
$$= 5,2 \cdot 10^{5}\ C.$$

Jadi pd cincin 5gr terdapat muatan $5,2 \cdot 10^5$ C

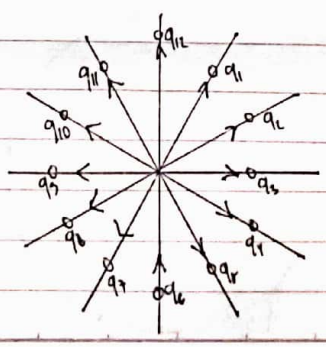
dimana pada cincin 5 gr terdapat $\frac{5,2 \cdot 10^5 C}{1,6 \cdot 10^{-19}} = 3,25 \cdot 10^{24}$ elektron

Kasus Gaya Listrik

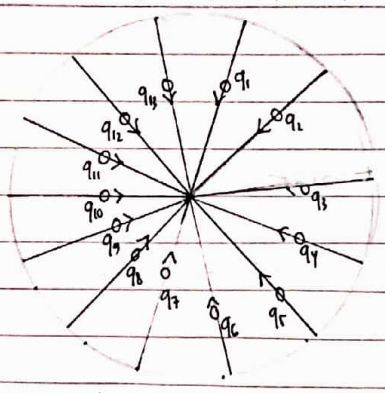
a).



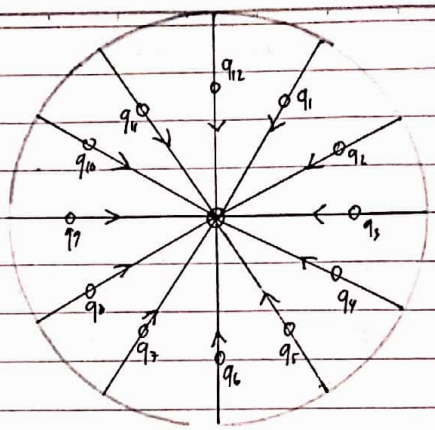
b).



c).



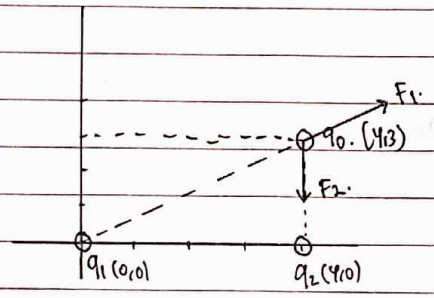
d).



e). dik. $q_1 = 25\ \mu C$ (0,0) Carilah gaya total pada q_0. akibat q_1 dan q_2

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

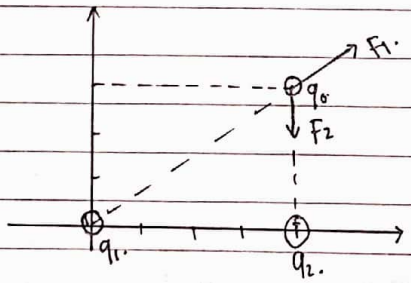
$q_0 = 10\ \mu C$ (4,3).



f). $q_1 = +25\ \mu C$ (0,0). Carilah gaya pada q_0.

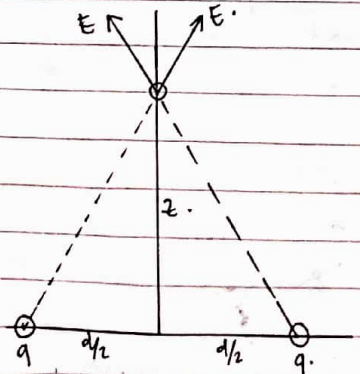
$q_2 = -15\ \mu C$ (4,0).

$q_0 = +20 \mu C$. (4,3).

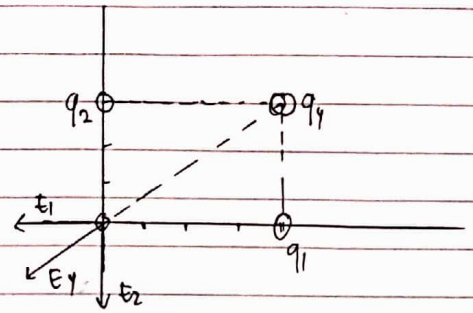


Kasus Medan Listrik

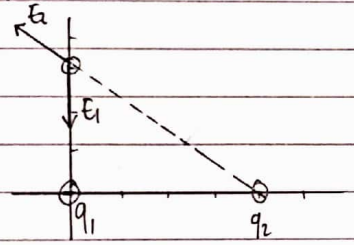
a).



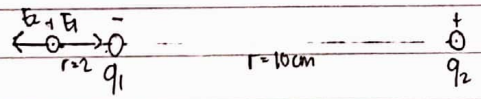
b). $q_1 = 2C$ (4,0) Tentukan medan listrik di (0,0).
$q_2 = 5C$ (0,3)
$q_3 = 10C$ (4,3).



c). $q_1 = -5\mu C$ (0,0). Hitung medan di (0,3).
$q_2 = 10\mu C$ (4,0).

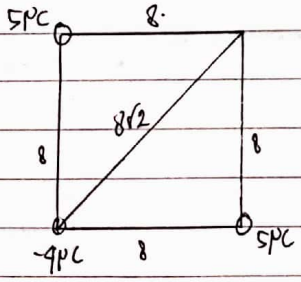


d). $q_1 = -25\ \mu C$ Besar dan arah medan listrik 2cm.
$q_2 = 50\mu C$.
$r = 10cm$.

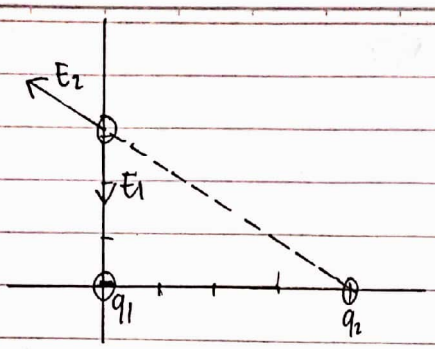


Potensial listrik.

1).



2).



$q_1 = -5\,pC$ $(0,0)$.

$q_2 = 10\,pC$ $(4,0)$

3). $q_1 = +25\,pC$ $(0,0)$.

$q_2 = -15\,pC$. $(4,0)$.

$q_0 = +20\,pC$. $(4,3)$. carilah titik $(0,3)$