No. : Date. :

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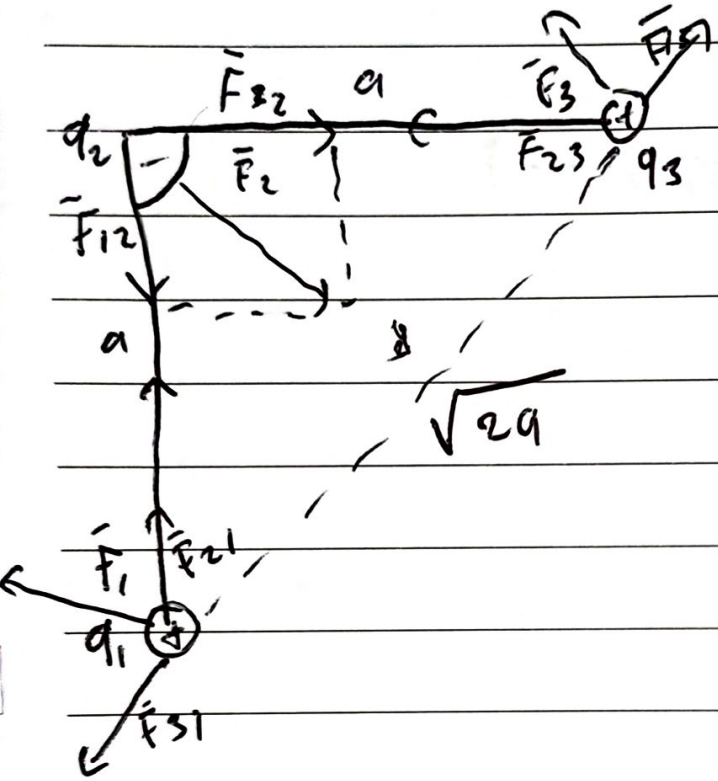

$+q_1 = +q_3 = 5\,\mu C = 5 \times 10^{-6} C$

$q_2 = -2\,\mu C = -2 \times 10^{-6} C$

$a = 0,10\,m$

① $F_1 = F_{21} + F_{31}$

$= (F_{21x} + F_{21y}) + (F_{31x} + F_{31y})$

$= (F_{21} \cos 90° \bar{i} + F_{21} \sin 90° \bar{j}) + (F_{31} \cos -45 \bar{i} + F_{31} \sin -45 \bar{j})$

$F_{31} = 9 \times 10^9 \, Nm^2/C^2 = \dfrac{(5 \times 10^{-6} C)^2}{2(0,10)^2}$

$= 11 N$

$F_{21} = 9 \times 10^9 \, Nm^2/C^2 = \dfrac{(-2 \times 10^{-6} N)(5 \times 10^{-6} N)}{(0,10m)^2}$

$= 9 N$

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$F_{1x} = (9 \cdot \cos 90) + (11 \cos -45)$

$= 0 + -7,9N$

$= -7,9N$

$F_{1y} = (9 \cdot \sin 90) + (11 \sin -45)$

$= 9N + -7,9N$

$= 1,1N$

$F_1 = F_{1x} + F_{1y}$

$= -7,9\bar{i} + 1,1\bar{j}$

(2). $F_2 = F_{12} + F_{32}$

~~$F_2 = (F_{12} \cos \bar{i} + F_{12} \sin \bar{j})$~~

$F_2 = (F_{12} \cos 0\bar{i} + F_{12} \sin 270\bar{j}) + (F_{32} \cos 270\bar{i} + F_{32} \sin 270\bar{j})$

$F_{12} = 9 \times 10^9 Nm^2/C^2 = \frac{(5 \times 10^{-6} C)(-2 \times 10^{-6} C)}{(0,10m)^2}$

$= 9N$

$F_{32} = 9 \times 10^9 Nm^2/C^2 = \frac{(5 \times 10^{-6} C)(-2 \times 10^{-6} C)}{(0,10m)^2}$

$= 9N$

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$F_{2x} = (g\cos 0) + (g\cos 270)$

$= g + 0$

$= g$

$F_{2y} = (g\sin 0) + (g\sin 270)$

$= 0 + (-g)$

$= -g\,N$

$F_2 = F_x + F_y$

$= g\bar{i} + (-g\bar{j})$

$= g\bar{i} - g\bar{j}$