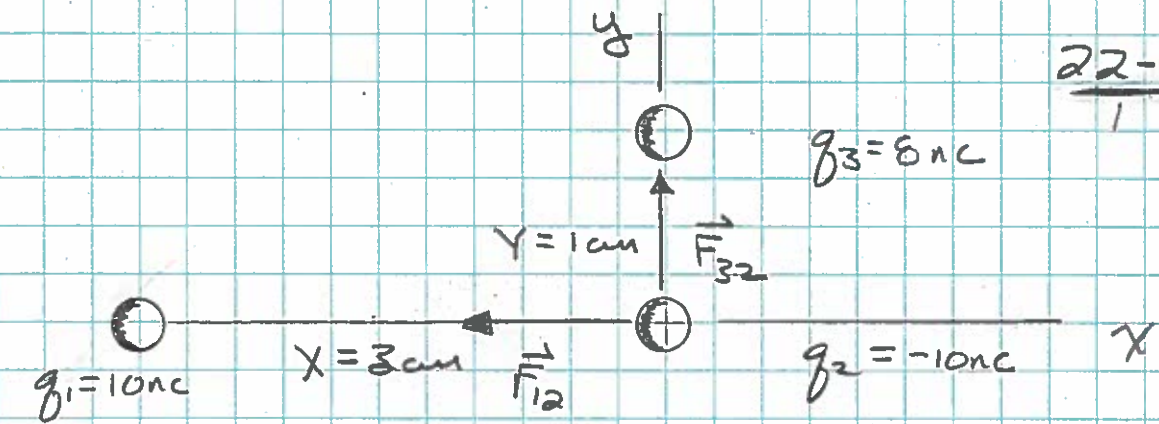
22-44



$$|\vec{F}_{12}| = \frac{K|q_1||q_2|}{X^2} = 9.989\times10^{-4}\ N$$

$$\vec{F}_{12} = -9.989\times10^{-4}\,\hat{i}\ N$$

$$|\vec{F}_{32}| = \frac{K|q_3||q_2|}{Y^2} = 7.129\times10^{-3}\ N$$

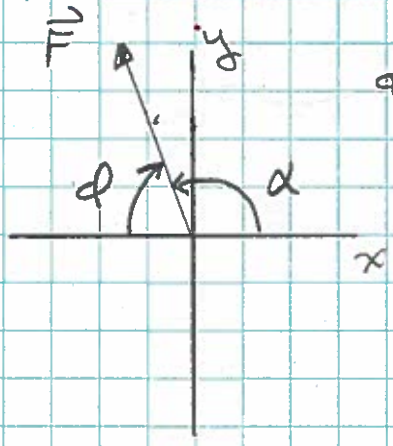
$$\vec{F}_{32} = 7.129\times10^{-3}\,\hat{j}\ N$$

So $\vec{F} = \vec{F}_{12} + \vec{F}_{32}$

$$= -9.989\times10^{-4}\,\hat{i} + 7.129\times10^{-3}\,\hat{j}\ N$$

and

$$|\vec{F}| = \sqrt{F_x^2 + F_y^2} = 7.199\times10^{-3}\ N$$



$$\phi = \tan^{-1}\left(\frac{|F_y|}{|F_x|}\right) = 82.02°$$

$$\alpha = 180° - \phi = 97.98°$$

ccw from +x