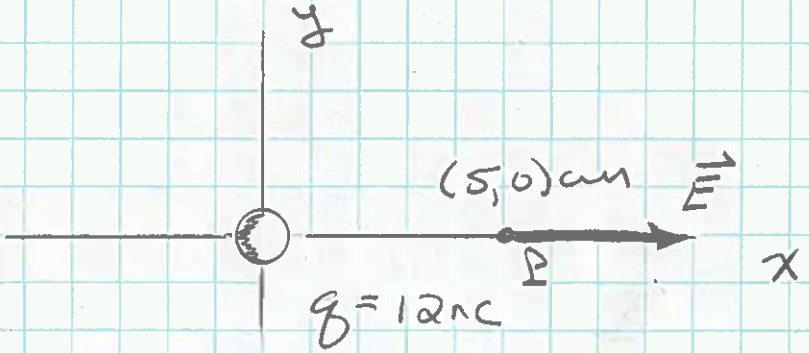
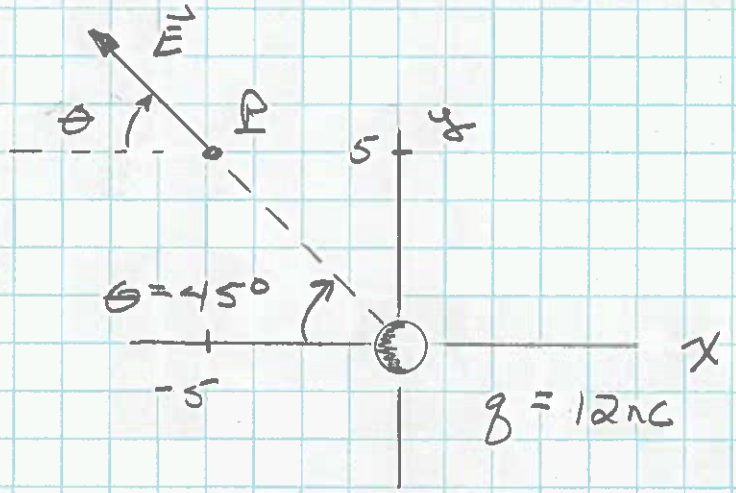
a.)



at P : $r = 5\text{cm}$, $|\vec{E}| = \frac{K|q|}{r^2} = 4.315 \times 10^4$ N/C

From sketch: $\vec{E} = 4.315 \times 10^4 \hat{i}$ N/C

b.)



at P : $r = \sqrt{5^2+5^2} = 7.07$ cm

$$|\vec{E}| = \frac{K|q|}{r^2} = 2.158 \times 10^4 \text{ N/C}$$

From sketch:

$$\vec{E} = -|\vec{E}|\cos\theta\,\hat{i} + |\vec{E}|\sin\theta\,\hat{j}$$

$$\vec{E} = -1.526 \times 10^4\,\hat{i} + 1.526 \times 10^4\,\hat{j}\ \frac{N}{C}$$