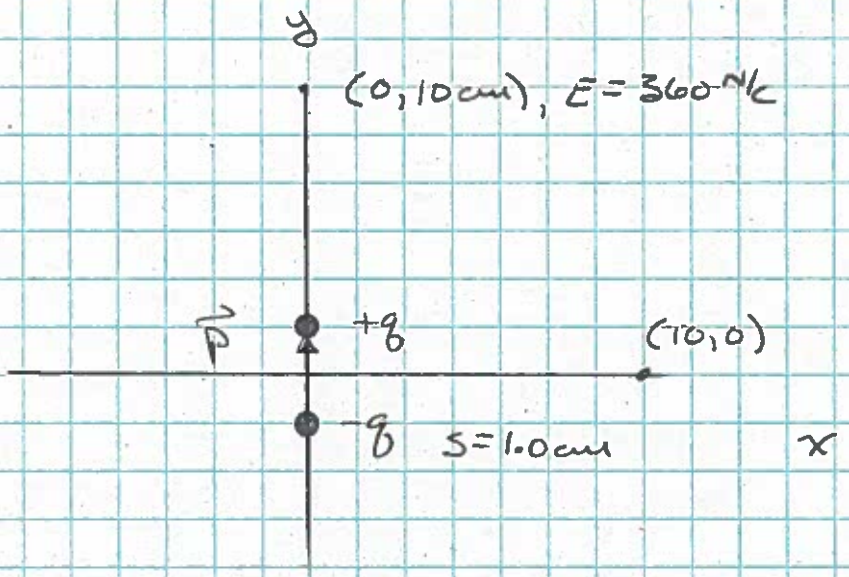

a.) For $r = 10\text{ cm} >> s$ on the Dipole axis:

$$\vec{E} \approx \frac{2K\vec{p}}{r^3}$$

So, for just magnitudes:

$$E = \frac{2Kp}{r^3} = \frac{2Kqs}{r^3}$$

So,

$$q = \frac{Er^3}{2Ks} = 2.002 \times 10^{-9}\text{ C}$$

$$= \underline{2.002\text{ nC}}$$

b.) For bisecting axis; $r = 10\text{ cm}$:

$$\vec{E} \approx \frac{K\vec{p}}{r^3}$$

So

$$|\vec{E}| \approx \frac{Kqs}{r^3} = \underline{180.0\text{ N/C}}$$