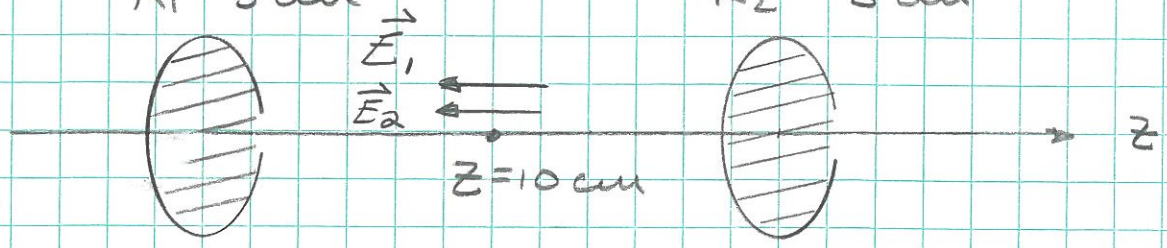

Axial field for disk:

$$E_z = \frac{\eta}{2\varepsilon_0}\left\{1 - \frac{z}{\sqrt{z^2+R^2}}\right\} \quad \left[\begin{array}{c} z=0 \text{ at} \\ \text{center of the} \\ \text{disk} \end{array}\right]$$

$$\eta_1 = \frac{Q_1}{\pi R_1^2} = -6.366\times10^{-6}\ C/m^2$$

$$\eta_2 = \frac{Q_2}{\pi R_2^2} = +6.366\times10^{-6}\ C/m^2$$

a.)

Disk 1: ($z_1 = +10cm$)

$$E_{z_1} = \frac{\eta_1}{2\varepsilon_0}\left\{1 - \frac{z_1}{\sqrt{z_1^2+R_1^2}}\right\}$$

$$E_{z_1} = -3.797\times10^{4}\ N/C$$

Disk 2: ($z_2 = -10cm$)

$$E_{z_2} = \frac{\eta_2}{2\varepsilon_0}\left\{1 - \frac{z_2}{\sqrt{z_2^2+R_2^2}}\right\}$$

$$E_{z_2} = -3.797\times10^{4}\ N/C$$

So: $E_z = E_{z_1} + E_{z_2} = -7.594\times10^{4}\ N/C$

($<0 \Rightarrow \vec{E}$ points left)

b.) Put $q = -1.0nC$ at $z = 10cm$

$$\vec{F} = q\vec{E}$$

$$F_z = qE_z = \underline{7.5944\times10^{-5}\ N} \quad \text{(to the right)}$$