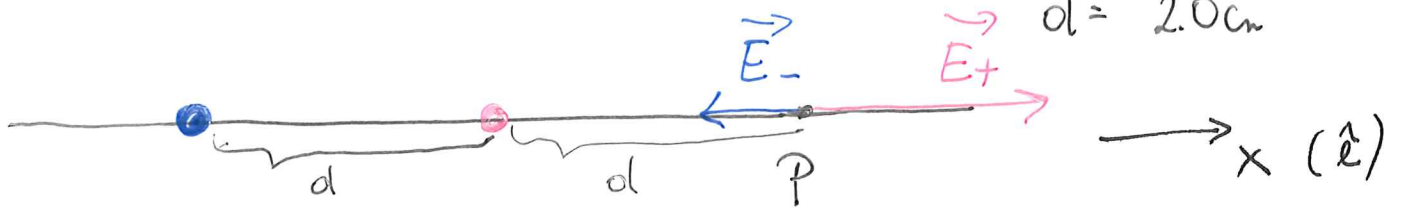$E = 6068 \, N/C$

$d = 2.0 \, cm$

$$\vec{E}_{net} = \vec{E}_+ + \vec{E}_-$$

$$E_{net} = E_+ - E_-$$

$$E_{net} = \frac{1}{4\pi\varepsilon_0} \cdot \frac{q}{d^2} - \frac{q}{4\pi\varepsilon_0 (2d)^2}$$

$$= \frac{1}{4\pi\varepsilon_0} \cdot \frac{3}{4} \cdot \frac{q}{d^2}$$

$$q = 0.36 \times 10^{-9} \, C$$

$$= 0.36 \, nC$$

①

$$E = 3670 \, N/C$$

$$E_{wire} = \frac{1}{4\pi \varepsilon_0} \frac{2\lambda}{r}$$

$$\boxed{\lambda = \frac{E \, 2\pi \varepsilon_0 \cdot r}{}}$$

$$\lambda = \frac{Q}{L}$$

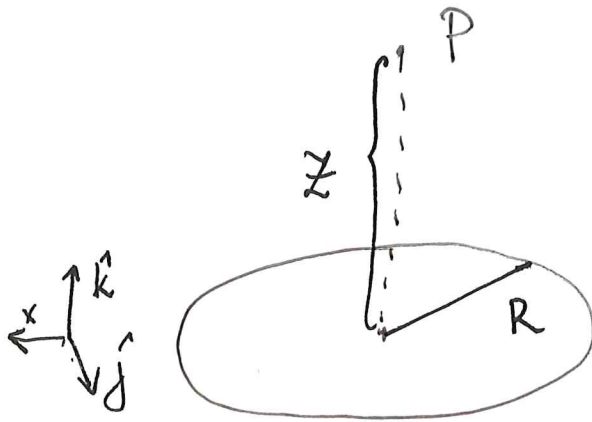$$Q = \lambda \cdot L \qquad \Delta Q = \lambda \cdot \Delta L$$

$$\lambda = E \cdot 2\pi \varepsilon_0 \cdot r \cdot \Delta L$$

$$\Delta Q = 30.62 \, \frac{nC}{m}$$

SURFACE DENSITY, σ

$$\boxed{\sigma = \frac{Q}{A}}$$ — total charge
— area

P

z

$\hat{k}$
x
$\hat{j}$

R

CHARGED DISK

$$\vec{E} = ?$$
P

$$E_{ring} = \frac{1}{4\pi\varepsilon_0} \frac{ZQ}{(Z^2 + R^2)^{3/2}}$$

to be continued on Wed Jan 25, 2017