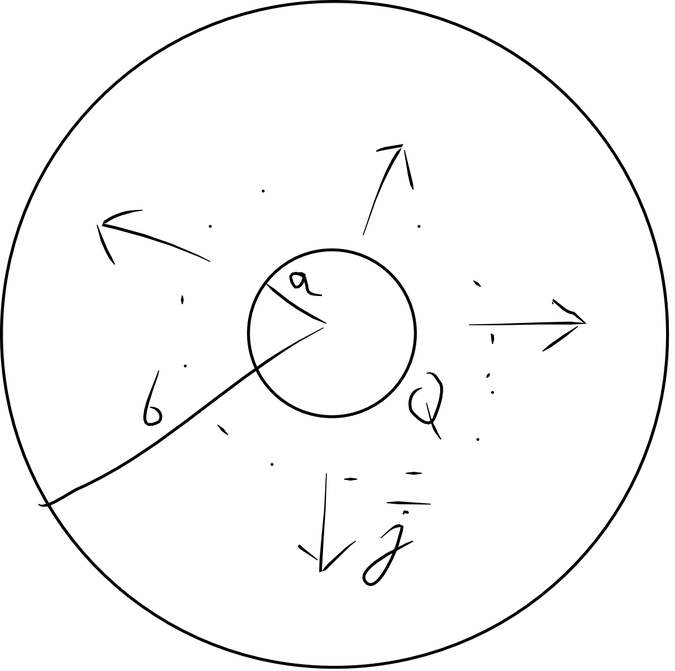

$$U = \frac{1}{4\pi\varepsilon_0}\frac{Q}{a} - \frac{1}{4\pi\varepsilon_0}\frac{Q}{b} \Rightarrow Q = \frac{4\pi\varepsilon_0 U}{\frac{1}{a}-\frac{1}{b}}$$

$$\bar{E}(r) = \frac{1}{4\pi\varepsilon_0}\frac{Q}{r^2}\hat{e}_r \qquad a \le r \le b$$

$$I = \int_S \sigma \bar{E}\cdot d\bar{S} = 4\pi r^2 \sigma \frac{1}{4\pi\varepsilon_0}\frac{Q}{r^2} = 4\pi \sigma \frac{\frac{4\pi\varepsilon_0 U}{\frac{1}{a}-\frac{1}{b}}}{4\pi\varepsilon_0} =$$

$$= \frac{4\pi\sigma U}{\frac{1}{a}-\frac{1}{b}}$$

$$R = \frac{U}{I} = \frac{U}{\frac{4\pi\sigma}{\frac{1}{a}-\frac{1}{b}}U} = \frac{\frac{1}{a}-\frac{1}{b}}{4\pi\sigma}$$

$$R = \int_a^b \frac{dr}{\sigma 4\pi r^2} = \frac{1}{\sigma 4\pi}\left(\frac{1}{a}-\frac{1}{b}\right)$$