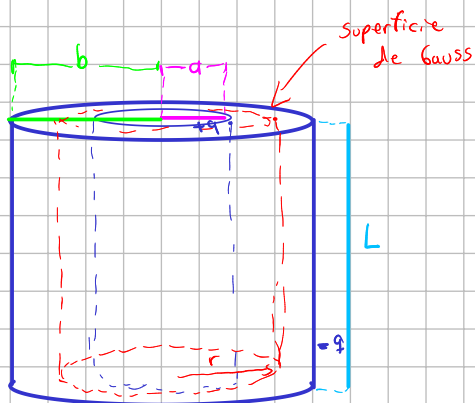


2-

+q cilindro  $r=a$ -q cilindro  $r=b$ 

$$\Phi = \int_s \vec{E} \cdot d\vec{S} = \frac{q}{\epsilon_0}$$

Campo Electrico en dirección radial

$$\int E dS \cos \theta = \frac{q}{\epsilon_0}$$

$$E \cdot S = \frac{q}{\epsilon_0}$$

$$E = \frac{q}{\epsilon_0 S}$$

$$E = \frac{q}{2\pi r L \epsilon_0}$$

$$S = 2\pi r L$$

$$\Delta V = - \int \vec{E} d\vec{r}$$

$$\Delta V = - \int \frac{q}{2\pi L \epsilon_0} \cdot \frac{dr}{r}$$

$$\Delta V = - \frac{q}{2\pi L \epsilon_0} \int_a^b \frac{dr}{r}$$

$$\Delta V = - \frac{q}{2\pi L \epsilon_0} \ln\left(\frac{b}{a}\right)$$

$$C = \frac{Q}{\Delta V}$$

$$\rightarrow C = \frac{q}{\frac{q}{2\pi \epsilon_0 L} \cdot \ln\left(\frac{b}{a}\right)}$$

$$C = \frac{2\pi \epsilon_0 L}{\ln\left(\frac{b}{a}\right)}$$