

## Repartido 2 – Ley de Gauss

## Resultados

2.  $\Phi_E = \frac{q}{6\epsilon_0}$

4.  $Q = 0$

5.  $\Phi_E = -E\pi a^2$

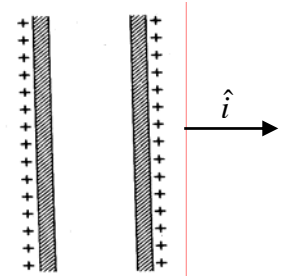
6. a)  $q_{in} = -3 \mu C$

b)  $q_{ext} = 13 \mu C$

7. a)  $\vec{E} = -\frac{\sigma}{\epsilon_0} \hat{i}$

b)  $\vec{E} = 0$

c)  $\vec{E} = \frac{\sigma}{\epsilon_0} \hat{i}$



8.  $\rho = 1.138 \times 10^{-12} C/m^3$

9.  $\sigma = 2\epsilon_0 E = 2\epsilon_0 \frac{mg \tan(\theta)}{q} = 5.11 \times 10^{-9} C/m^2$

10. a)  $\vec{E} = 0\hat{r}$     b)  $\vec{E} = \frac{1}{4\pi\epsilon_0} \frac{q}{r^2} \hat{r}$     c)  $\vec{E} = 0\hat{r}$     d)  $\vec{E} = 0\hat{r}$

e)  $q_{in} = -q, \quad q_{ext} = 0$

11. a)  $\vec{E} = -\frac{q}{2\pi\epsilon_0 L r} \hat{r}$     b)  $q_{in} = -q, \quad q_{ext} = -q$     c)  $\vec{E} = \frac{q}{2\pi\epsilon_0 L r} \hat{r}$

12. a)  $q = \pi\alpha a^4$     b)  $\vec{E} = \frac{\alpha}{4\epsilon_0} r^2 \hat{r}$

14. a)  $\vec{E} = \frac{e}{4\pi\epsilon_0} \frac{a}{R^3} \hat{r}$     b)  $f = \frac{e}{2\pi\sqrt{4\pi\epsilon_0 m R^3}}$