

## Repartido 1 – Cargas y Campos Eléctricos

## Resultados

$$8. \quad \vec{E} = \frac{q}{\sqrt{2}\pi\epsilon_0} \frac{1}{a^2} \hat{j}$$

$$11. \text{ b) } \begin{cases} E_x = \frac{\lambda}{2\pi\epsilon_0} \left( \frac{1}{\sqrt{(L-2x)^2 + 4y^2}} - \frac{1}{\sqrt{(L+2x)^2 + 4y^2}} \right) \\ E_y = \frac{\lambda}{4\pi\epsilon_0} \left( \frac{L-2x}{\sqrt{(L-2x)^2 + 4y^2}} + \frac{L+2x}{\sqrt{(L+2x)^2 + 4y^2}} \right) \frac{1}{y} \end{cases}$$

$$13. \quad R = \frac{a}{\sqrt{2}}$$

$$14. \quad 1) \quad E_x = \frac{q_1 - q_2}{2\pi^2 \epsilon_0} \frac{R}{(R^2 + y^2)^{3/2}}, \quad E_y = \frac{q_1 + q_2}{4\pi\epsilon_0} \frac{1}{(R^2 + y^2)^{3/2}} y$$

$$2) \quad W = q \frac{q_1 + q_2}{4\pi\epsilon_0 R^2} \left( \sqrt{R^2 + l^2} - R \right)$$

$$3) \quad F = +qE_x$$

15. Golpea a la placa superior en  $x=0.0408\text{ m}$