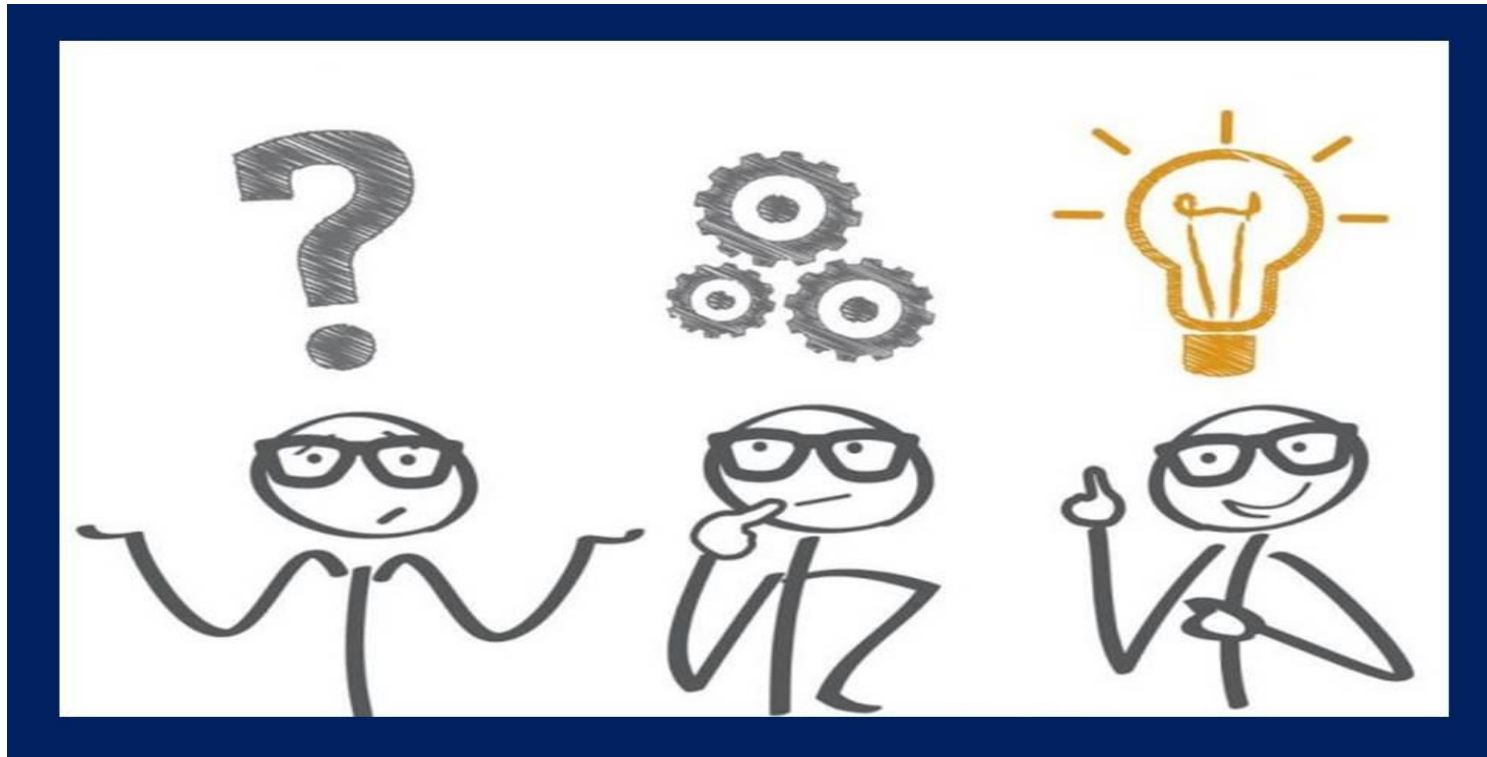


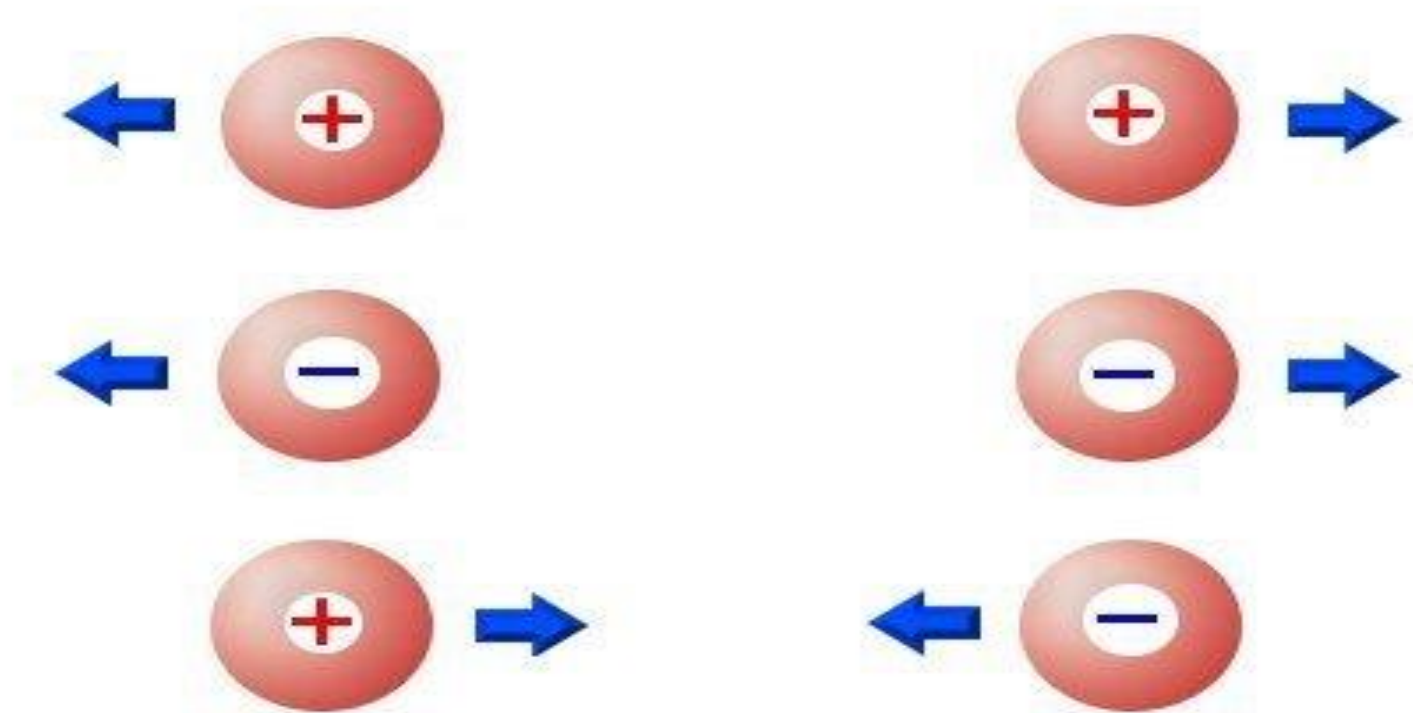
FISICA GRADO 11°

Problemas de Aplicación



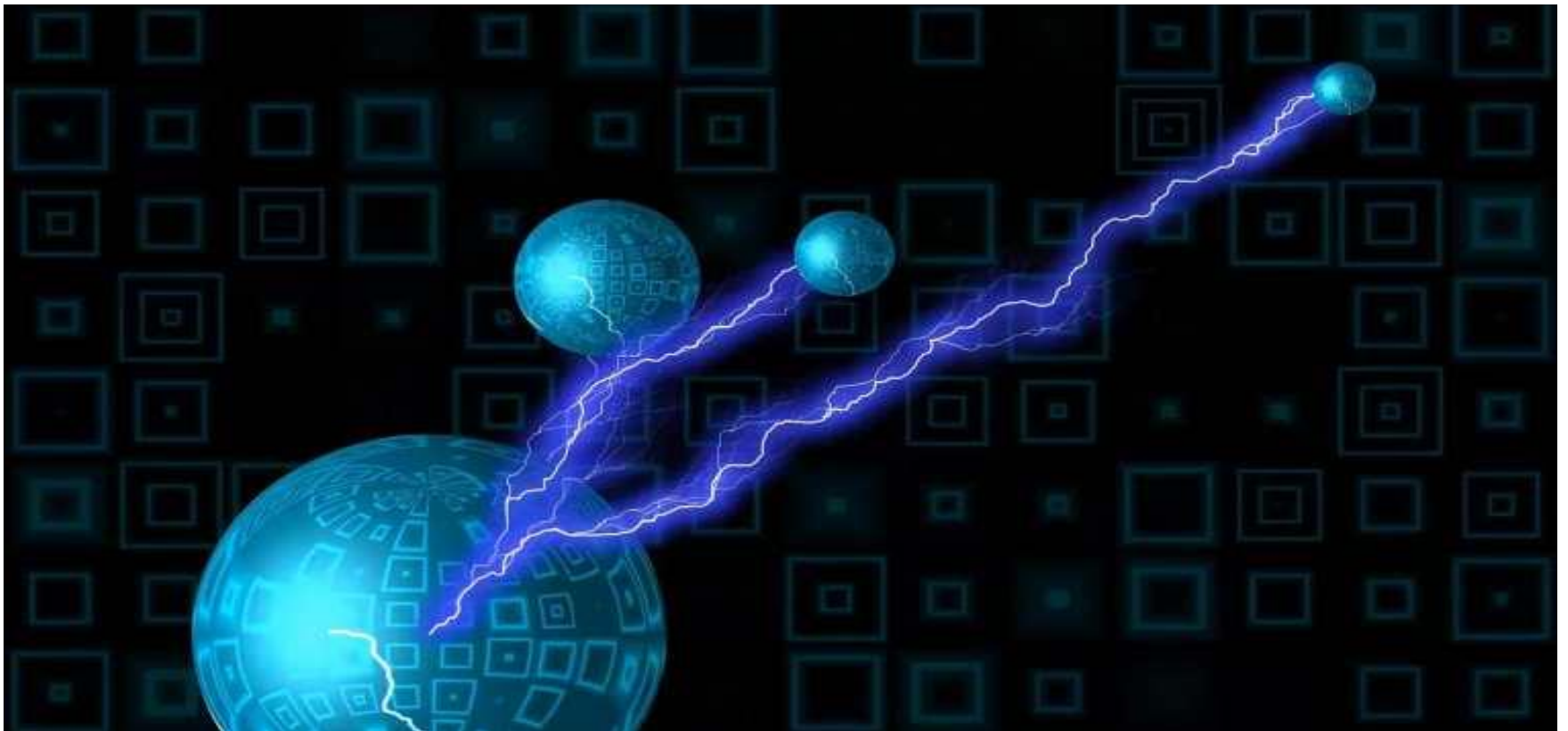
FISICA GRADO 11°

Problemas de Aplicación



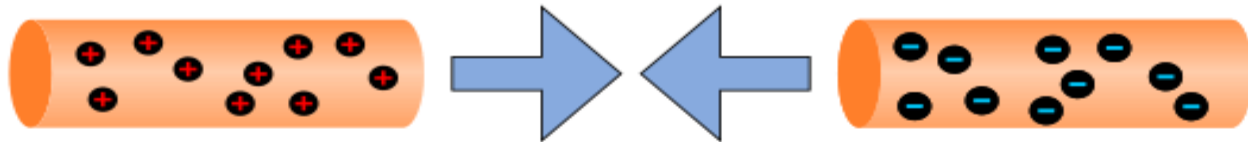
FISICA GRADO 11°

Problemas de Aplicación

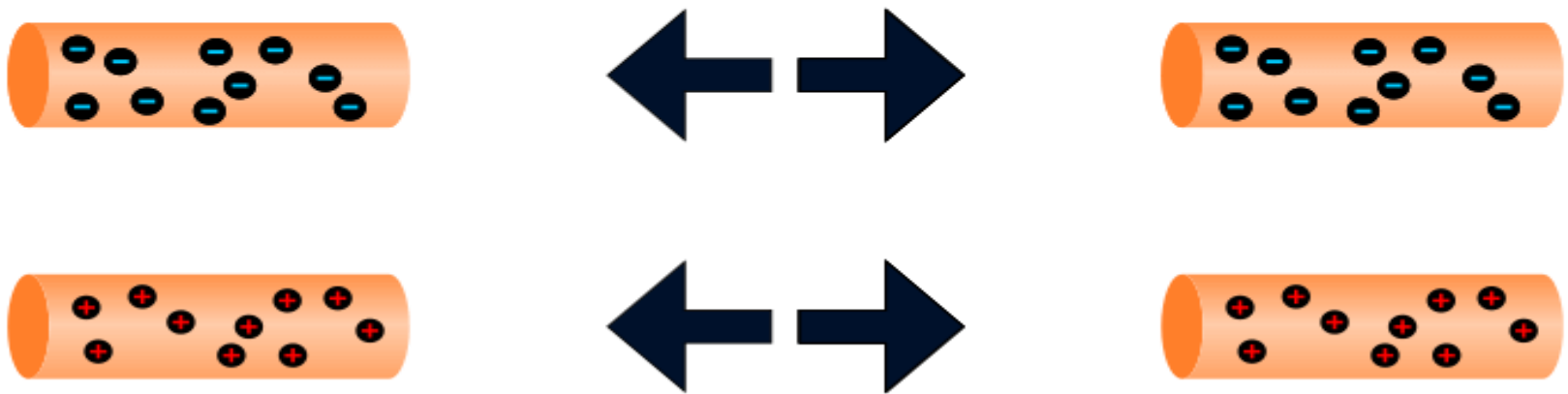


FISICA GRADO 11°

Problemas de Aplicación



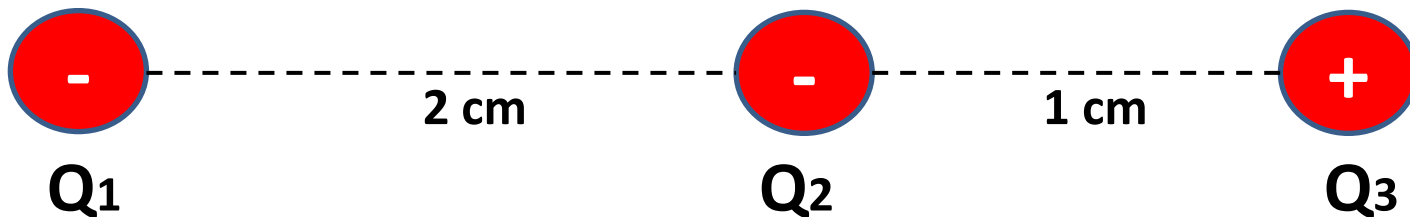
Las cargas de diferente signo se atraen



Las cargas de igual signo se repelen

Tema Electrostatica

Tres cargas Q_1 , Q_2 y Q_3 se encuentran sobre una misma recta como indica la figura.



Donde

$$Q_1 = -3 \times 10^{-7} \text{ C}$$

$$Q_2 = -2 \times 10^{-7} \text{ C}$$

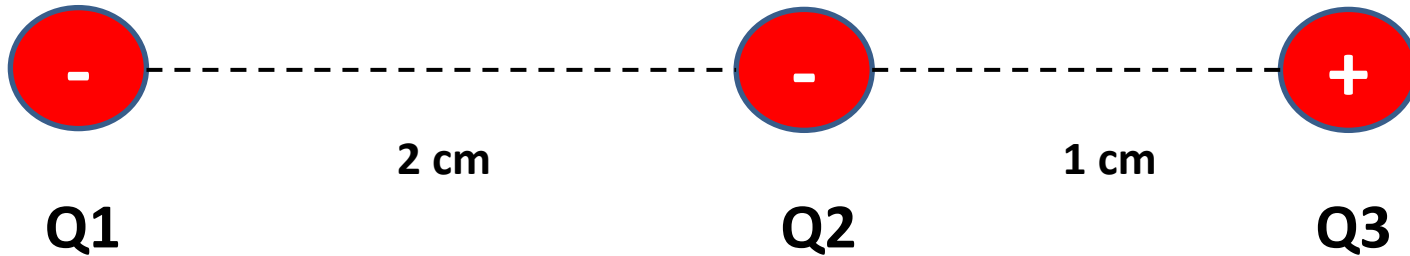
$$Q_3 = 4 \times 10^{-7} \text{ C}$$

Determinar La fuerza electrostática sobre la carga Q_2

Aplicamos la Formula de Coulomb.

$$F = \frac{K \cdot Q_1 \cdot Q_2}{d^2}$$

$K = 9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{C}^2$ Constante de proporcionalidad



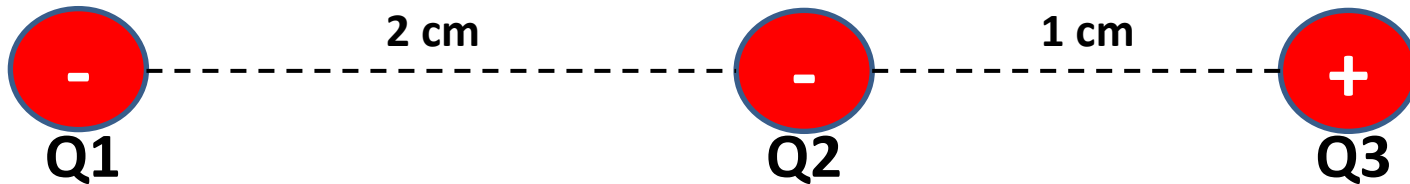
1. Hallamos la Fuerza electrostática entre la carga Q1 y Q2

$$Q_1 = -3 \times 10^{-7} \text{ C}$$

$$Q_2 = -2 \times 10^{-7} \text{ C}$$

$$F = \frac{K \cdot Q_1 \cdot Q_2}{d^2}$$

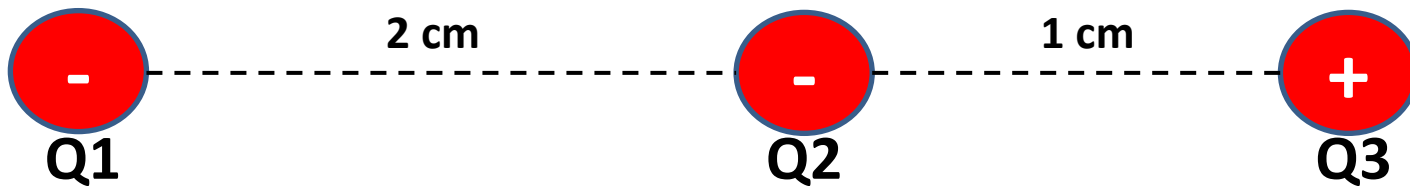
$K = 9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{c}^2$ Constante de proporcionalidad



$$F_1 = \frac{(9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{c}^2) \cdot (-3 \times 10^{-7} \text{ C}) \cdot (-2 \times 10^{-7} \text{ C})}{(2 \text{ cm})^2}$$

$$F = \frac{K \cdot Q_1 \cdot Q_2}{d^2}$$

$K = 9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{c}^2$ Constante de proporcionalidad

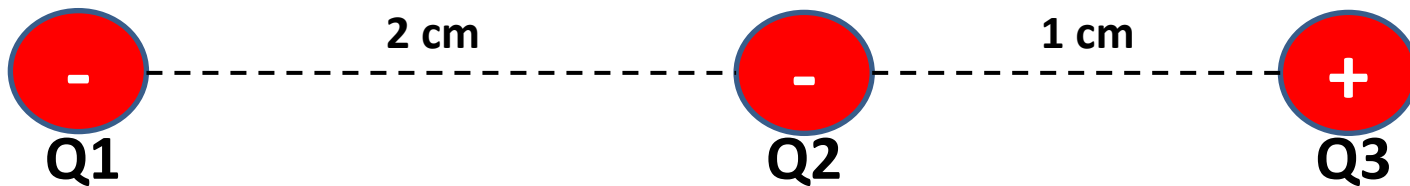


$$1 \text{ m} = 100 \text{ cm} \quad 2 / 100 = 0,02 \text{ m}$$

$$F_1 = \frac{(9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{c}^2) \cdot (-3 \times 10^{-7} \text{ C}) \cdot (-2 \times 10^{-7} \text{ C})}{(0.02 \text{ m})^2}$$

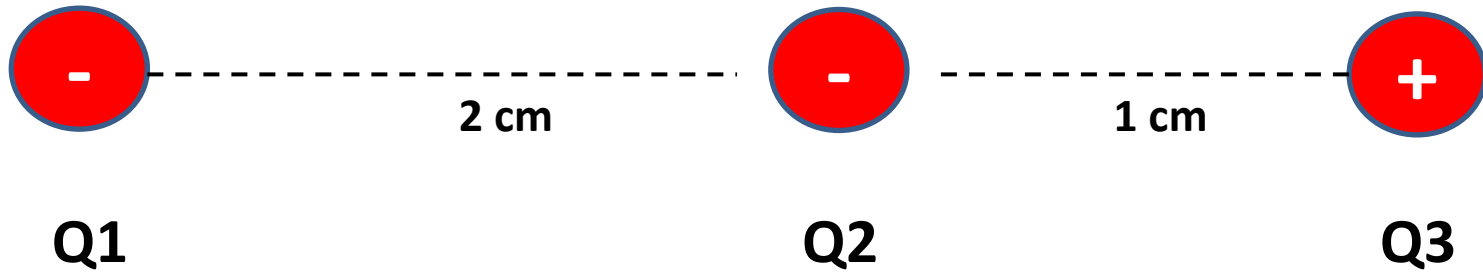
$$F = \frac{K \cdot Q_1 \cdot Q_2}{d^2}$$

$K = 9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{c}^2$ Constante de proporcionalidad



$$1 \text{ m} = 100 \text{ cm} \quad 2 / 100 = 0,02 \text{ m} \quad \longrightarrow \quad 2 \times 10^{-2} \text{ m}$$

$$F_1 = \frac{(9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{c}^2) \cdot (-3 \times 10^{-7} \text{ C}) \cdot (-2 \times 10^{-7} \text{ C})}{(2 \times 10^{-2} \text{ m})^2}$$



$$F_1 = \frac{(9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{C}^2) \cdot (-3 \times 10^{-7} \text{ C}) \cdot (-2 \times 10^{-7} \text{ C})}{(2 \times 10^{-2} \text{ m})^2}$$

$$F_1 = \frac{54 \times 10^{-5} \text{ New} / \text{m}^2}{4 \times 10^{-4} \text{ m}^2}$$

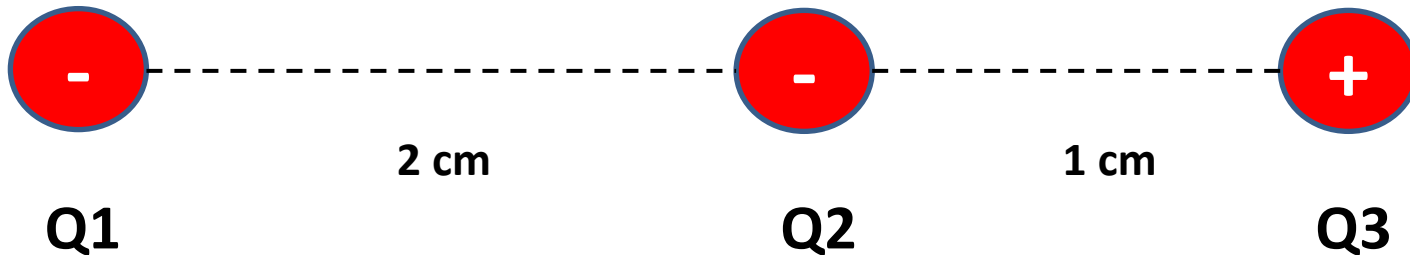
$$F_1 = 27/2 \times 10^{-5} \cdot 10^4$$

$$F_1 = 27/2 \times 10^{-1} \text{ New} \longrightarrow F_1 = 13,5 \times 10^{-1} \text{ New}$$

Aplicamos la Formula de Coulomb.

$$F = \frac{K \cdot Q_1 \cdot Q_2}{d^2}$$

$K = 9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{C}^2$ Constante de proporcionalidad



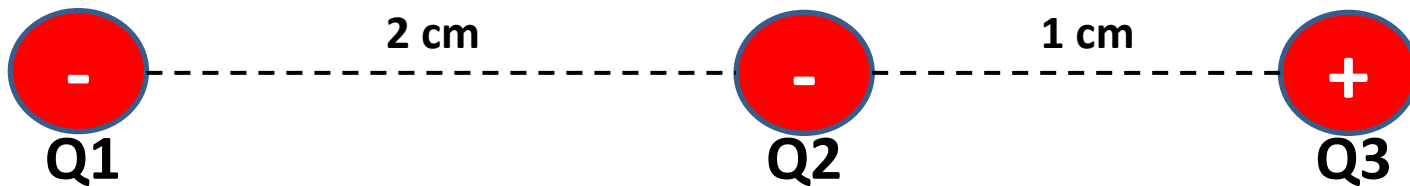
2. Hallamos la Fuerza electrostática entre la carga Q2 y Q3

$$Q_2 = -2 \times 10^{-7} \text{ C}$$

$$Q_3 = 4 \times 10^{-7} \text{ C}$$

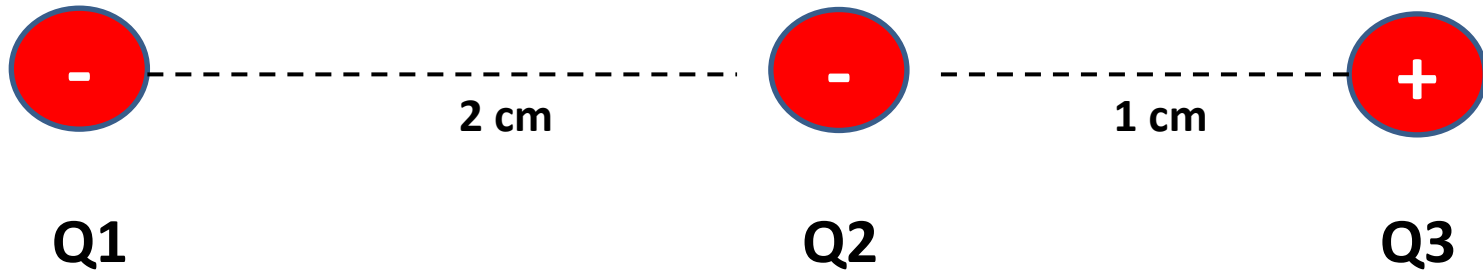
$$F = \frac{K \cdot Q_1 \cdot Q_2}{d^2}$$

$K = 9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{c}^2$ Constante de proporcionalidad



$$1 \text{ m} = 100 \text{ cm} \quad 1 / 100 = 0,01 \text{ m} \quad \longrightarrow \quad 1 \times 10^{-2} \text{ m}$$

$$F_2 = \frac{(9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{c}^2) \cdot (-2 \times 10^{-7} \text{ C}) \cdot (4 \times 10^{-7} \text{ C})}{(1 \times 10^{-2} \text{ m})^2}$$

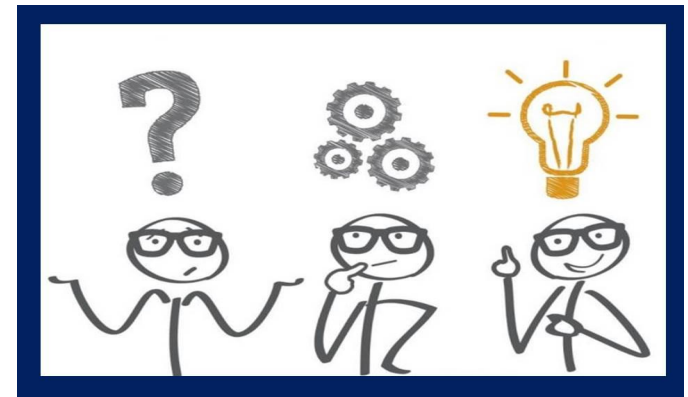


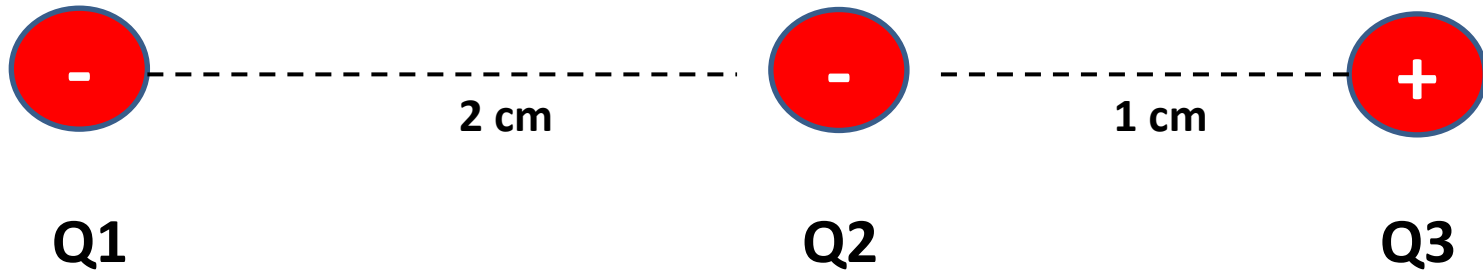
$$F_2 = \frac{(9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{C}^2) \cdot (-2 \times 10^{-7} \text{ C}) \cdot (4 \times 10^{-7} \text{ C})}{(1 \times 10^{-2} \text{ m})^2}$$

$$F_2 = \frac{-72 \times 10^{-5} \text{ New} / \text{m}^2}{10^{-4} \text{ m}^2}$$

$$F_2 = -72 \times 10^{-5} \cdot 10^4 \text{ New}$$

$$F_2 = -72 \times 10^{-1} \text{ New}$$





Hallamos la Fuerza total

$$F_t = F_1 + F_2$$



$$F_t = 13,5 \times 10^{-1} \text{ New} + (-72 \times 10^{-1} \text{ New})$$

$$F_t = -58,5 \times 10^{-1} \text{ New} \quad \longrightarrow \quad F_t = -5,85 \text{ New}$$







E-mail Alcape



alcape55@gmail.com

Radio OnLine Alcape



Link Para Entrar

Google:radioalcape.radio12345.com

Página web Alcape



<https://alcape.jimdofree.com/>

