

a) Determine σ

b) " $|\vec{E}|$

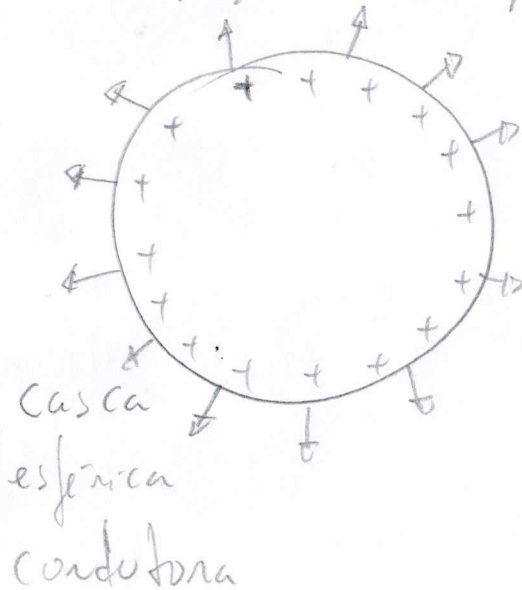
Densidade superficial de carga

$$\sigma = \frac{q}{A}, \quad A = \text{área da esfera}$$

$$\sigma = \frac{q}{4\pi R^2} = \frac{2,4 \times 10^{-6} \text{ C}}{4 \cdot \pi \cdot \left(\frac{1,3}{2}\right)^2 \text{ m}^2}$$

$$\sigma \approx 4,52 \times 10^{-7} \frac{\text{C}}{\text{m}^2}$$

Orientação do campo?



Saindo da esfera!

Módulo $|\vec{E}|$?

Lei de Gauss

$$|\vec{E}| = \frac{\sigma}{\epsilon_0}$$

$$|\vec{E}| = \frac{4,52 \times 10^{-7} \frac{\text{C}}{\text{m}^2}}{8,85 \times 10^{-12} \frac{\text{C}^2}{\text{N} \cdot \text{m}^2}}$$

$$= 5,107 \times 10^4 \frac{\text{N}}{\text{C}}$$

$$|\vec{E}| \approx 5,107 \times 10^4 \frac{\text{C}}{\text{m}^2} \cdot \frac{\text{N} \cdot \text{m}^2}{\text{C}^2}$$

$$|\vec{E}| \approx 5,107 \times 10^4 \frac{\text{N}}{\text{C}}$$