

Versão C

a) Carga na versão (A)

$$\vec{D} = \frac{\lambda}{2\pi} \frac{1}{r} \vec{e}_r = \frac{\lambda}{2\pi} \frac{3}{2d_1} \vec{e}_r$$

b) Carga na versão (A)

$$\Phi_1 = \frac{\lambda}{2\pi\epsilon_1} \ln\left(\frac{d_1}{R_1}\right) + \frac{\lambda}{2\pi\epsilon_0} \ln\left(\frac{d_2}{d_1}\right) = 137.98 \text{ V}$$

$$c) \sigma' = \vec{P} \cdot \vec{e}_r = \left(1 - \frac{1}{\epsilon_r}\right) \frac{\lambda}{2\pi} \frac{1}{d_1} = \frac{1}{3} \frac{\lambda}{2\pi} \frac{1}{d_1} = 5.3 \times 10^{-9} \text{ C/m}^2$$

d) Carga na versão (B)

$$\frac{U_{ele}}{L} = \frac{1}{2} \lambda \Phi_1 = 2.08 \times 10^{-7} \text{ J/m}$$