

Lista 5 - Corrente e Resistência Elétricas

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1. $I = \frac{Q_0}{\tau} e^{-t/\tau}$

2. 0,32 A.

3. (a) $E_x = -V/L$.

(b) $R = 4\rho L/(\pi d^2)$.

(c) $I = \frac{V(\pi d^2)}{4\rho L}$.

(d) $J = \frac{V}{\rho L}$.

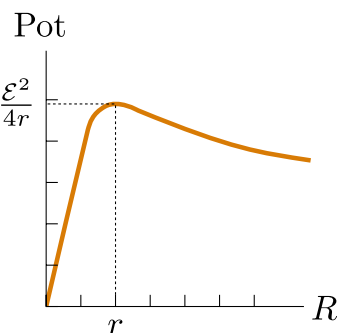
(e) Mostre!

4. $\rho_A/\rho_B = (a/b)^2$.

5. (a) $I = \frac{\mathcal{E}}{r + R}$

(b) $\text{Pot} = \frac{\mathcal{E}^2 R}{(r + R)^2}$

(c)



6. $I_1 = \frac{4}{25} \frac{\mathcal{E}}{R}$, $I_2 = \frac{71}{50} \frac{\mathcal{E}}{R}$,
 $I_3 = \frac{18}{25} \frac{\mathcal{E}}{R}$ e $I_4 = \frac{27}{50} \frac{\mathcal{E}}{R}$,

7. (a) $Q/4C$ em ambos.

(b) $Q/4$ e $3Q/4$.

(c) $\frac{Q^2}{32C}$ e $\frac{3Q^2}{32C}$.

(d) $\frac{7Q^2}{8C}$.

8. (a) $\tau = 3RC$.

(b) $\tau = 2RC$.

(c) $I(t) = \frac{\mathcal{E}}{2R}(2 - e^{-t/2RC})$.

9. $\rho = \frac{2\pi L}{\ln\left(\frac{b}{a}\right)} \frac{\Delta V}{I}$