

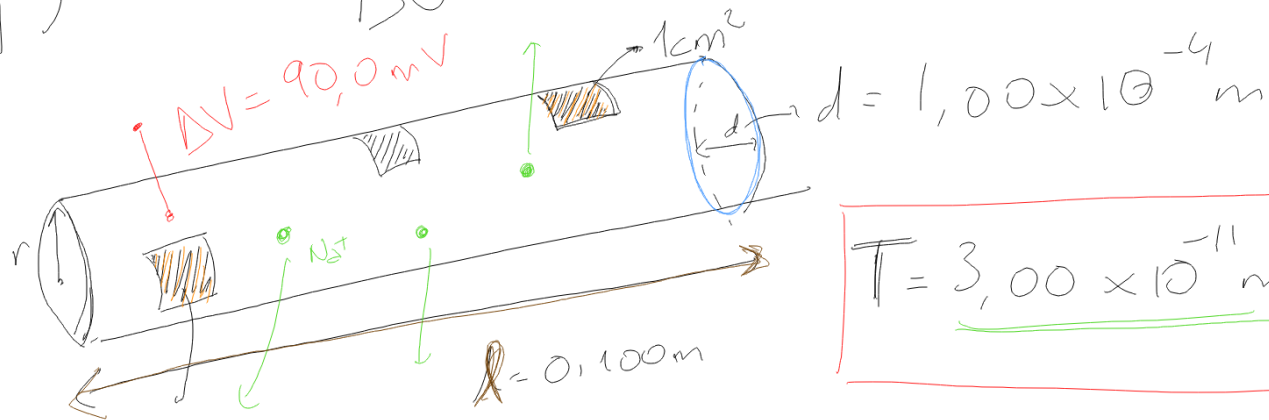
Thymine

Adenine

1.2.2)

$$q \left. \begin{array}{l} \\ \\ \end{array} \right\} W = q \underbrace{\Delta V}_{DU}$$

$$A = 2\pi r l$$

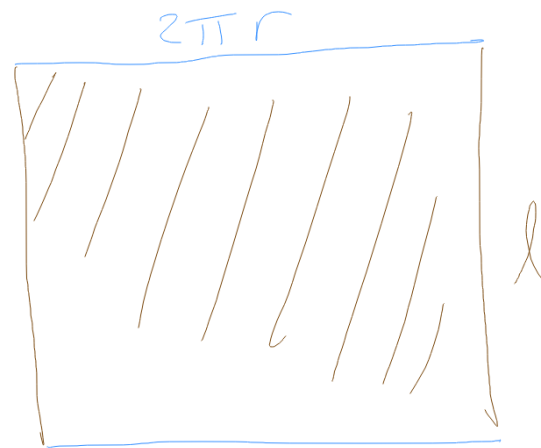


$$T = 3.00 \times 10^{-11} \text{ moles} / \text{cm}^2$$

$$\frac{C}{h} ?$$

$$\frac{T \cdot 2\pi r l \cdot N_A \cdot e \cdot 3600 \text{ s}}{h}$$

Units:  $\frac{\text{moles}}{\text{s}} \cdot \text{C/s}$



$$\begin{array}{c}
 T \\
 \hline
 (3,00 \times 10^{-7} \text{ moles}) \\
 \hline
 s \text{ m}^2
 \end{array}
 \quad
 \begin{array}{c}
 \dot{A} \\
 \hline
 2 \pi (0,500 \times 10^{-4} \text{ m}) (0,100 \text{ m})
 \end{array}
 \quad
 \begin{array}{c}
 N_A \\
 \hline
 (6,02 \times 10^{23} \text{ atoms}) \\
 \hline
 \text{mol}
 \end{array}
 \quad
 \begin{array}{c}
 e \\
 \hline
 (1,6 \times 10^{-19} \text{ C}) \\
 \hline
 \text{atomo}
 \end{array}
 \quad
 \begin{array}{c}
 s/h \\
 \hline
 (3600 \text{ s}) \\
 \hline
 h
 \end{array}$$

$$(3,00) 2\pi (0,500) (0,100) (6,02) (1,6) (3600) \times 10^{-7} = 36200 \times 10^{-7} = 3,26 \times 10^{-3} \text{ C/h}$$

$$3,00 \times 10^{-11} \frac{\text{moles}}{s \text{ cm}^2} \left( \frac{1 \times 10^4 \text{ cm}^2}{1 \text{ m}^2} \right) = 3,00 \times 10^{-7} \frac{\text{moles}}{s \text{ m}^2}$$

1

$$\frac{C}{h} \Delta V = \frac{W}{h}$$

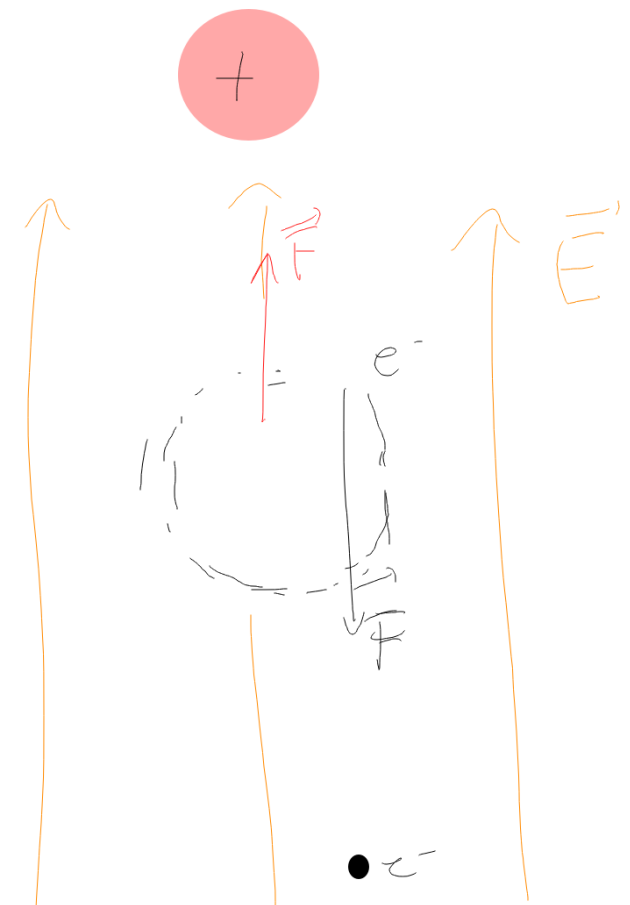
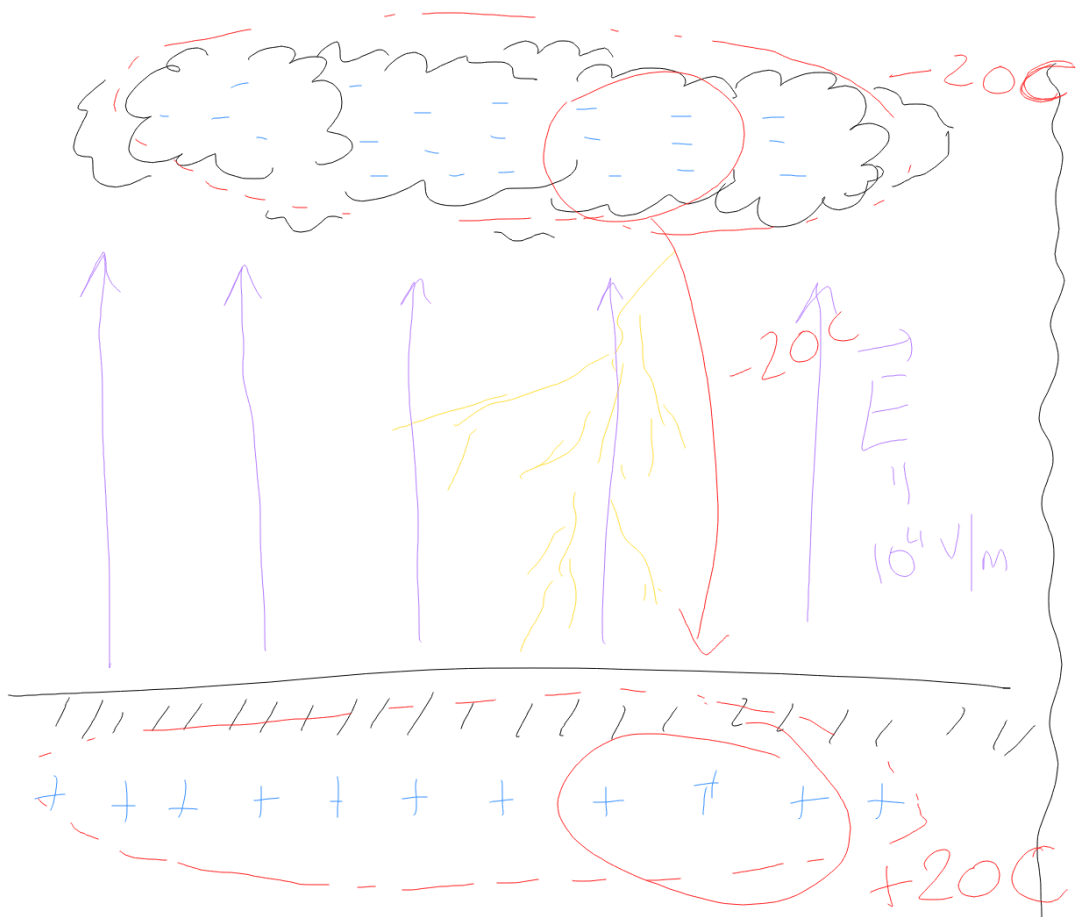
$$[W] = J$$

$$3,26 \times 10^3 \frac{C}{h} (90 \times 10^{-3} V) = 2,9 \times 10^{-4} J/h$$

→ Potencia

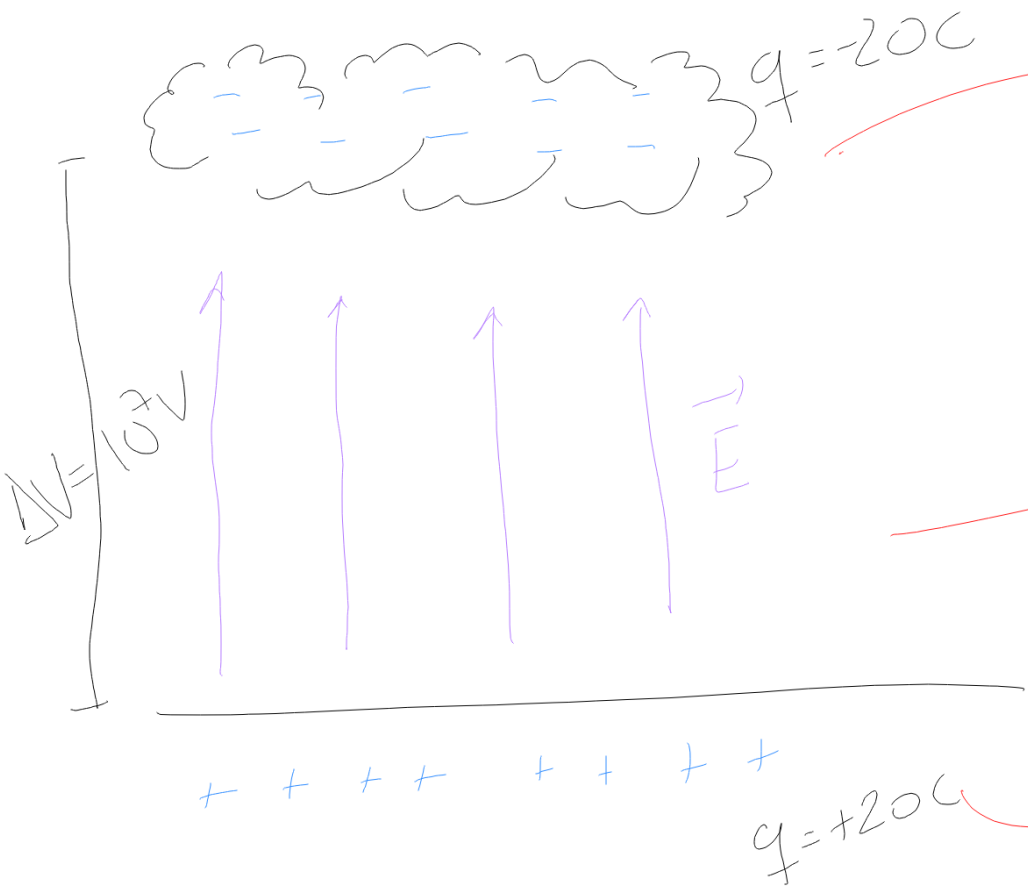
1.2.6)

$10 \times 10^3$   
"  
 $d = 1,0 \text{ km}$

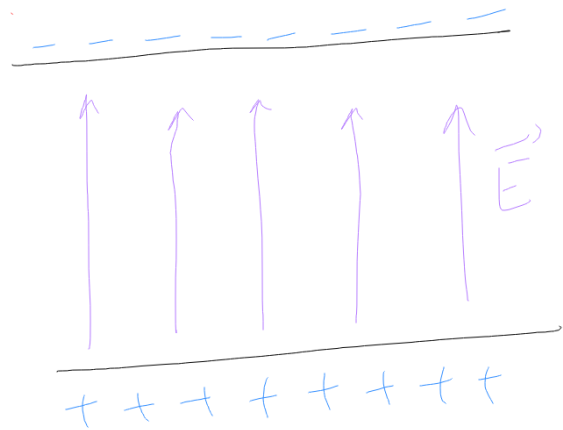


$$\Delta V_{T,N} = E \cdot d = 1,0 \times 10^7 \text{ V}$$

$$U = 1,0 \times 10^8 \text{ J}$$



Capacitor

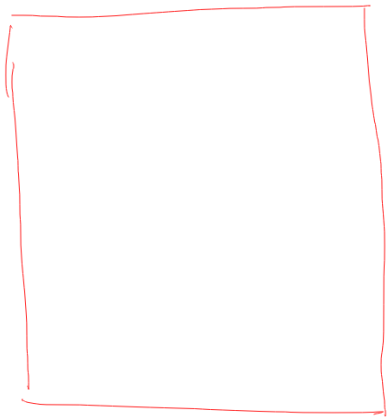


$$U = \frac{1}{2} q \Delta V$$

$$C = \frac{q}{\Delta V} = 2,0 \times 10^{-6} F$$

$$C_{||} = \frac{\epsilon_0 \overset{\sim}{A}}{d} \rightarrow \boxed{\overset{\sim}{A} = \frac{C d}{\epsilon_0} = \frac{(2,0 \times 10^{-6} \text{ F})(1,0 \times 10^{-3} \text{ m})}{8,85 \times 10^{-12} \frac{\text{C}^2}{\text{Nm}^2}} = 2,26 \times 10^8 \text{ m}^2}$$

10 km



22,6 km

$$F_e \equiv k$$

$$\frac{9,92}{r^2}$$

$$= \frac{1}{4\pi(\epsilon_0)} \frac{9,92}{r^2} \text{ m}^2$$

$$\frac{1}{4\pi \epsilon_0}$$

$$\overset{\sim}{A} = 2,26 \times 10^8 \text{ m}^2 \left( \frac{1 \text{ km}}{1000 \text{ m}} \right)^2 = 2,26 \times 10^8 \text{ m}^2 \frac{1 \text{ km}^2}{1 \times 10^6 \text{ m}^2} = 226 \text{ km}^2$$