

9.20

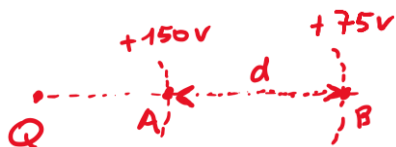


$$V_+ - V_- = \Delta V = 95 \text{ mV}$$

$$C = 7,5 \cdot 10^{-9} \text{ F}$$

$$E = \frac{\Delta V}{d} = \frac{95 \cdot 10^{-3}}{7,5 \cdot 10^{-3}} = \underline{\underline{1,3 \cdot 10^7 \text{ V/m}}}$$

9.21



$\vec{E}$ n'est pas constant entre A et B!

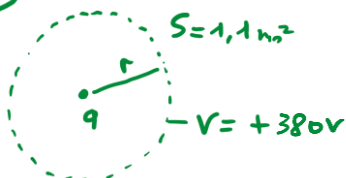
$$r_A = k \frac{Q}{V(A)}$$

$$r_B = k \frac{Q}{V(B)}$$

$$\Rightarrow d = r_B - r_A = k Q \left(\frac{1}{V(B)} - \frac{1}{V(A)} \right)$$

$$= 9 \cdot 10^9 \cdot 1,5 \cdot 10^{-8} \left(\frac{1}{75} - \frac{1}{150} \right) = \underline{\underline{0,9 \text{ m}}}$$

9.22



$$\begin{cases} V = k \frac{q}{r} \Rightarrow q = \frac{rV}{k} \\ S = 4\pi r^2 \Rightarrow r = \left(\frac{S}{4\pi} \right)^{1/2} \end{cases}$$

$$\Rightarrow q = \frac{V}{k} \cdot \left(\frac{S}{4\pi} \right)^{1/2} = \underline{\underline{+2,7 \cdot 10^{-8} \text{ C}}}$$

9.23

$$1 \text{ m} \cong 3,0 \cdot 10^6 \text{ V}$$

champ disruptif

$$1 \text{ mm} \cong 3,0 \cdot 10^3 \text{ V}$$

$$3,0 \text{ mm} \cong \underline{\underline{9,0 \cdot 10^3 \text{ V}}}$$