

Question 36124

The potential in SI system is $\varphi = k \frac{q}{r}$, where $k = \frac{1}{4\pi\epsilon_0}$, q is the charge and r is the distance between charge and point, where potential is calculated.

Hence, for our case,

$$\varphi(A) - \varphi(B) = kq \left(\frac{1}{r_A} - \frac{1}{r_B} \right) = 8.99 \cdot 10^9 \frac{N \cdot m^2}{C^2} \cdot (-4.51 \cdot 10^{-3} C) \cdot \left(\frac{1}{0.6m} - \frac{1}{0.85m} \right) = -19.87 \cdot 10^6 V .$$