

### 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,

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