Answer on Question #53751-Physics-Electromagnetism

A wire spans two telephone poles. A tightrope walker picks up a sphere with a charge of $\Delta q = 5.3\ microcoulombs = 5.3\ \cdot 10^{-6} C$ at one end and carries it to the other end in $\Delta t = 7.2\ seconds$. What is the average current from one end of the wire to the other? (7.4e-7 A)

Solution

The average current is

$$I = \frac{\Delta q}{\Delta t} = \frac{5.3\ \cdot 10^{-6} C}{7.2\ s} = 7.4 \cdot 10^{-7} A.$$

Answer: $\mathbf{7.4 \cdot 10^{-7} A}$.