

Question 36264

We are given current $I=4.6\text{ A}$. By definition, it is the charge Q which goes through cross-section normally to the direction of the flow in one second. The charge of electron is $e=1.6\cdot 10^{-19}\text{ C}$. Hence, the number of electrons one needs to find is $N=\frac{I\cdot 1\text{ s}}{e}=\frac{4.6\text{ C}}{1.6\cdot 10^{-19}\text{ C}}=2.875\cdot 10^{19}$.