This problem is part of your written homework for chapter 26.

We have studied batteries that provide a fixed voltage across their terminals. In that case, we had to examine our circuit and use our physical principles in order to calculate the current through the battery. In neuroscience, it is sometimes useful to use a constant current source (CCS), which instead provides a fixed amount of current through itself. In this case, we have to use our physical principles in order to calculate the voltage drop across the source.

Suppose we have a fixed current source that always provides a current of $I_0 = 10^{-6}$ amps. For the three circuits shown below, find the voltage drop across the current source. Each resistor has a resistance $R = 2000 \Omega$. (Get your answer in terms of the symbols $I_0$ and $R$ before plugging in numbers.)