

Ohm's Law Problems

1. (a) What is the voltage across the resistor if the two cells are each 1.5 V in Figure 1?

(b) If a current of 0.10 A is measured at point *a*, what is the resistance of the resistor? What is the current at *b*?

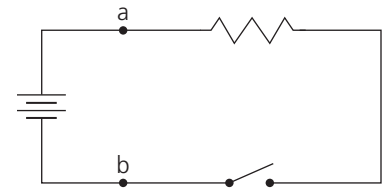


Figure 1

2. If a toaster has a resistance of $220\ \Omega$, how much current will it draw from a 110 V outlet?
3. A calculator runs on two 6.0 V dry cells connected in parallel. If the calculator draws 0.001 A, how many milliamps (mA) does it draw? What is the effective resistance of the calculator?
4. A resistor has a value of $100\ \Omega$. If a current of 5 mA passes through it, what is the applied voltage?
5. A resistance has a voltage of 10 mV (millivolts) applied to it. The current through the resistance is 0.5 mA. What is the value of the resistance?
6. A hair dryer uses a current of 10 A when plugged into a 120 V outlet. What is the resistance of the hair dryer?