Ohm's Law and Power (SwiftStudy Printable)

Key Formulas

$$V = IR$$

V	electromotive force (voltage)	volts (V)
I	current	amperes (A)
R	resistance	ohms (Ω)

$$P = IV$$

P	power	watts (W)
I	current	amperes (A)
V	electromotive force (voltage)	volts (V)

$$P = \frac{E}{\Delta t}$$

P	power	watts (W)
E	energy	joules (J)
Δt	time	s

Tips to Remember

- One ampere is quite a bit of current. Even high current devices like electric dryers will draw only a few tens of amperes. Therefore, you should expect some problems to use smaller units of current such as mA and μA (microamperes) that you will need to convert to amperes.
- On the other hand, one ohm of resistance isn't very much at all. Most components in a circuit will have resistances measured in kΩ or MΩ (megaohms), and you will need to convert them to ohms.
- The last equation, relating power to energy and time, can be used to predict either the amount of energy that a circuit will consume or the amount of heat that it will produce. For example, you could use this equation to determine how much heat an 850 watt electric stove burner will produce in a minute.