

Due Th 2/27

Use L, G, R, S format

Physical Science: Ohm's Law Practice Name _____ Per _____

Solve the following problems. Show all your work and use correct units.

Formulas: $I = V/R$ $V = IR$ $R = V/I$
 $I =$ current in Amperes (A) $V =$ Voltage in Volts (V) $R =$ Resistance in ohms (Ω)

1. How much current would flow through a circuit that has 1000 ohms of resistance if powered by 1.5 volts?

L: I

R: $I = \frac{V}{R}$

G: $R = 1000\Omega$ $V = 1.5V$ S: $I = \frac{1.5V}{1000\Omega} = \boxed{0.0015A}$
or $0.002A$

2. How many amperes of current will flow through a circuit that has 3 ohms of resistance if powered by a 12 volt battery?

L: I

R: $I = \frac{V}{R}$

G: $R = 3\Omega$ $V = 12V$ S: $I = \frac{12V}{3\Omega} = \boxed{4A}$

3. The side lights of a car have 10 ohms of resistance. How much current will a 12 volt battery create through the lights?

L: I

R: $I = \frac{V}{R}$

G: $R = 10\Omega$ $V = 12V$ S: $I = \frac{12V}{10\Omega} = \boxed{1.2A}$ or $1A$

4. What is the current in the 30 ohm heating coil of a coffee maker that operates on a 120 volt circuit?

L: I

R: $I = \frac{V}{R}$

S: $I = \frac{120V}{30\Omega} = \boxed{4A}$

G: $R = 30\Omega$ $V = 120V$

5. How much resistance allows 6 V battery to produce a current of 0.006 A?

L: R

R: $R = \frac{V}{I}$

S: $R = \frac{6V}{0.006A} = \boxed{1000\Omega}$

G: $V = 6V$ $I = 0.006A$

6. What is the resistance of a curling iron that draws 12 A of current on a 120 V circuit?

L: R

G: $V = 120V$

$I = 12A$

R: $R = \frac{V}{I}$

S: $R = \frac{120V}{12A} = \boxed{10\Omega}$

$= \boxed{10\Omega}$

$= \boxed{10\Omega}$

$= \boxed{10\Omega}$