

Name \_\_\_\_\_

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

1) What is the difference between an electrical open and a short?

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2) What is included in a complete electrical circuit?

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3) What happens to current flow (amperes) and wattage if the resistance of a circuit is increased because of a corroded connection?

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4) What is Ohm's law?

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5) What is the difference between a short-to-voltage and a short-to-ground?

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## Answer Key

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1) An open results in the stoppage of the flow of current in the circuit, whereas a short is a path of reduced resistance, which usually causes an increase in the flow of current through the circuit and may or may not cause a fuse to blow.

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2) The items included in a complete circuit include:

1. A power source, such as a battery.
2. Protection, such as a fuse.
3. Power side conductor, such as a wire.
4. Control device, such as a switch.
5. An electrical load, such as a light bulb.
6. A return path, such as a ground connection.

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3) A corroded electrical connection results in increased unwanted resistance in the circuit. This increased resistance reduces the current (in amperes), as well as the voltage (amperes times volts) that are applied to the loads in the circuit.

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4) Ohm's Law states, "It requires one volt to push one ampere through one ohm of resistance."

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5) A short-to-voltage involves a copper-to-copper connection whereas a short-to-ground involves a copper-to-steel connection.

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