

Name \_\_\_\_\_

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

1) What are three operating conditions that would cause an electric vehicle to supply less than normal range?

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2) What is the difference between a hybrid electric vehicle and a plug-in hybrid electric vehicle?

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3) What are the three levels of chargers?

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4) What are the advantages of using a higher-capacity battery in a PHEV?

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5) What is the difference in the current used between level 2 and level 3?

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## Answer Key

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1) The range of an EV depends on many factors, including:

- Battery energy storage capacity
- Vehicle weight
- Outside temperature
- Terrain (driving in hilly or mountainous areas requires more energy from the battery)
- Use of air conditioning and other electrical devices

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2) A plug-in hybrid electric vehicle (PHEV) is a vehicle that is designed to be plugged into an electrical outlet at night to charge the batteries. By charging the batteries in the vehicle, it can operate using electric power alone (stealth mode) for a longer time, thereby reducing the use of the internal combustion engine (ICE).

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3) • Level 1 uses 110- to 120-volt standard electric outlet (20-amp circuit)

- Level 2 chargers use 220 to 240 volts
- Level 3 charging stations use 440 volts and can charge most electric vehicles to 80% charge in less than 30 minutes.

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4) The size or capacity of the battery pack used determines how far the vehicle can travel without using the ICE, commonly called the electric vehicle, or EV, range.

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5) Level 1 can charge up to 16 amperes.

Level 2 can charge up to 80 amperes.

Level 3 can charge up to 125 amperes.

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