**Unit Vocabulary.** Match the definition on the right with the word on the left. Write the letter of the definition on the line to the left of the vocabulary word.

|  |  |  |  |
| --- | --- | --- | --- |
| \_\_\_\_\_ | Atom | **A.** | A material or object through which electricity flows |
| \_\_\_\_\_ | Circuit | **B.** | The ability to do work |
| \_\_\_\_\_ | Conductor | **C.** | Energy that is made from sources that can be regenerated |
| \_\_\_\_\_ | Direct current | **D.** | A thorough examination of how energy is used in the home and the costs associated with those uses |
| \_\_\_\_\_ | Alternating current | **E.** | A substance that does not allow electricity to move easily |
| \_\_\_\_\_ | Electricity | **F.** | Electrical current that is constantly changing directions |
| \_\_\_\_\_ | Electron | **G.** | The basic unit of all elements of matter |
| \_\_\_\_\_ | Proton | **H.** | An electric circuit providing more than one conducting path |
| \_\_\_\_\_ | Energy Audit | **I.** | An electrical circuit providing a single conducting path |
| \_\_\_\_\_ | Insulator | **J.** | A flow of electrons, often through a circuit, resulting from a net difference in charged particles |
| \_\_\_\_\_ | Watt | **K.** | Fuels that are formed by the decay and decomposition of organisms buried in the Earth for millions of years |
| \_\_\_\_\_ | Kilowatt hour | **L.** | The difference in electrical potential between two points in an electrical circuit |
| \_\_\_\_\_ | Parallel circuit | **M.** | The rate at which energy is used |
| \_\_\_\_\_ | Renewable energy | **N.** | Electrical current that flows in one direction |
| \_\_\_\_\_ | Series circuit | **O.** | Gases that absorb infrared radiation and radiate heat in all directions |
| \_\_\_\_\_ | Energy | **P.** | A small atomic particle with a negative charge |
| \_\_\_\_\_ | Voltage | **Q.** | A typical unit for electrical power |
| \_\_\_\_\_ | Greenhouse gas | **R.** | A small atomic particle with a positive charge |
| \_\_\_\_\_ | Power | **S.** | A connection that allows current to take the path of least resistance |
| \_\_\_\_\_ | Fossil fuel | **T.** | A complete and closed path through which circulating electrical current can flow |
|  |  | **U.** | Typical unit for electrical energy used over a period of time |

**Short answer.**

1. What are three examples of fossil fuels?
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Describe three benefits of using fossil fuels.
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3) Describe three drawbacks of using fossil fuels.

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4) What are three examples of renewable energy?

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5) Describe three benefits of using renewable energy.

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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6) Describe three drawbacks of using renewable energy.

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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7) Why is it important to reduce the greenhouse gas effect?

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8) Describe two significant ways that you can reduce the amount of energy you use at home.

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9) What is the difference between energy and power?

*Energy is* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*whereas power is* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10) Who is the City of Talent’s energy provider? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11) What is the typical voltage supplied in a house outlet? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12) Is your house supplied with direct or alternating current? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13) What is a common source of direct current? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14) On average, which devices used the most power (from the compilation of your home energy audits)?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

15) How did you determine the operating power draw of an appliance or a device?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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16) Do you think this was an accurate measurement of power use? Why or why not?

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**Calculations**

1. Refrigerator A uses 1400 kWh of energy each year while Refrigerator B uses 350 kWh of energy each year. If energy costs $0.10 per kWh, what is the cost difference between running Refrigerator A and B? Show all of your work.
2. For a 100-Watt light bulb that operates 6 hours per day, how many kilowatt-hours of electricity were used? Show all of your work.

At $0.10 per kWh, what is the cost of using that light bulb per day?

At $0.10 per kWh, what is the cost of using that light bulb per month (30 days)?

At $0.10 per kWh, what is the cost of using that light bulb per year?

1. A space heater has three settings, 600W, 900W, and 1500W. If the space heater is on for 6 hours, what is the cost of operating the space heater at 600W if energy costs $0.12 per kWh? Show all of your work.

If the same space heater uses 900W and is on for 6 hours, what is the cost of operating the space heater if energy costs $0.12 per kWh? Show all of your work.

If a space heater uses 1500W and is on for 6 hours, what is the cost of operating the space heater if energy costs $0.12 per kWh?Show all of your work.