Name _____ Class _____ Date _____

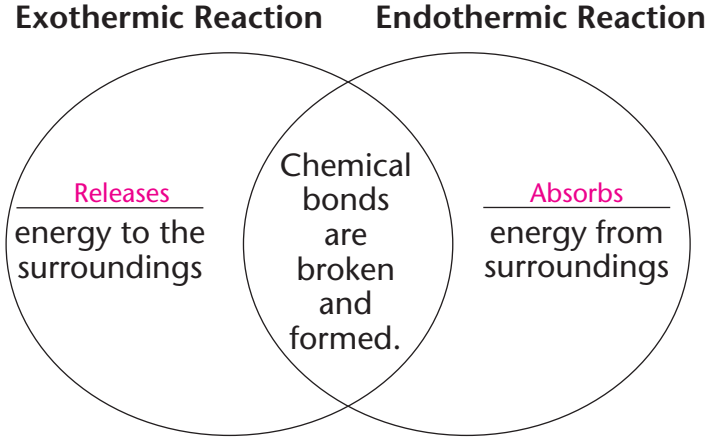
Section 7.3 Energy Changes in Reactions

(pages 206–209)

This section discusses how chemical bonds and energy relate to chemical reactions.

Reading Strategy (page 206)

Comparing and Contrasting As you read, complete the Venn diagram below to show the differences between exothermic and endothermic reactions. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.



Chemical Bonds and Energy (pages 206–207)

1. What is chemical energy? Chemical energy is the energy stored in the chemical bonds of a substance.

2. Chemical reactions involve the breaking of chemical bonds in the reactants and the formation of chemical bonds in the _____. Circle the correct answer.

   (products) reactants substances

3. Is the following sentence true or false? The formation of chemical bonds absorbs energy. false

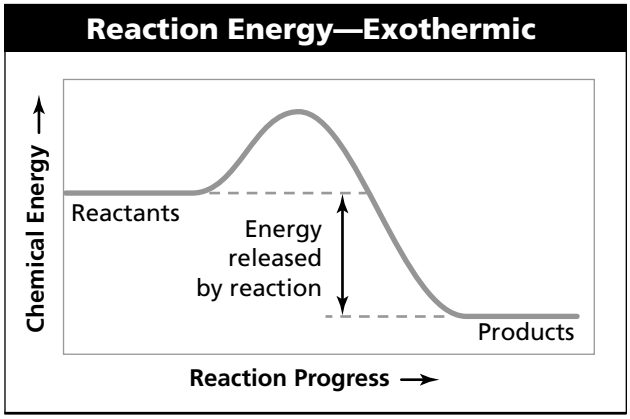
4. Is the following sentence true or false? The heat and light given off by a propane stove result from the formation of new chemical bonds.

   true

5. The combustion of one molecule of propane (C_3H_8) results in the formation of 6 C=O double bonds and 8 O–H single bonds.

Exothermic and Endothermic Reactions (pages 208–209)

6. During a chemical reaction, energy is either released or absorbed.
7. Is the following sentence true or false? Physical and chemical changes can be either exothermic or endothermic changes. true
8. What is an exothermic reaction? An exothermic reaction is a chemical reaction that releases energy to its surroundings.
9. Is the following sentence true or false? In exothermic reactions, the energy required to break the bonds in the reactants is greater than the energy released as the products form. false
10. Circle the letter of each sentence that is correct for the graph.



a. The energy required to break the bonds in the reactants is greater than the energy released as the products form.
b. The energy released as the products form is greater than the energy required to break the bonds in the reactants.
c. The chemical energy of the reactants is greater than the chemical energy of the products.

Conservation of Energy (page 209)

11. In an endothermic reaction, heat from the surroundings plus the chemical energy of the reactants is converted into the _____ of the products. Circle the correct answer.

a. kinetic energy
b. potential energy
c. chemical energy