DATE: NAME: CLASS:

CHAPTER 9	Energy and Change PreQuiz	BLM 9.1.1
ASSESSMENT		

1. Consider the following equation:

$2C_2H_2(g) + 5O_2(g) \rightarrow 4CO_2(g) + 2H_2O(g) + \text{energy}$

(a) Does the equation represent an endothermic reaction or an exothermic reaction? Justify your answer.

(b) What effect would this reaction have on the temperature of its surroundings? Compare the temperature of the surroundings before the reaction takes place to the temperature of the surroundings after the reaction takes place.

(c) What does the equation communicate about the relative energy of the chemical bonds in the reactants and products?

2. Define and distinguish among the following terms: thermal energy, heat, and temperature.

Energy and Change PreQuiz

(continued)

3. Use the following information to answer the questions below:

$Q = m \times c \times \Delta t$ — c = specific heat capacity (J/g • °C)

Q = heat (J) — $\Delta t = t_f - t_i$ (°C)

m = mass (g) — For water, c = 4.184 J/g • °C

(a) A 50.0 g sample of water at 80.0 °C is mixed in a calorimeter with a 50.0 g sample of water at 5.0 °C. What is the final temperature of the water?

(b) A reaction raises the temperature of 100.0 g of water by 3.20 °C. How much heat does the reaction release?

(c) 5 g of iron at 75.0 °C are added to 150.0 g of water at 15.0 °C in a calorimeter. What is the final temperature of the iron and the water? (For iron, c = 0.444 J/g • °C.)