Chapter 6 HW

Review Questions: 7, 21, 23

Exercises: 8, 12, 13, 14

Problem: 2

Additional:

A. Why does a penny become warmer when it is struck by a hammer?

B. A 125 gram steel ball is dropped from the top of a tall building, 40 feet high. If all energy is retained by the ball to increase its temperature, what is the temperature increase?

C. Compare the energy required to change the temperature of the following materials from 0 °C to 100 °C, to the energy required to make the same change to the same amount of water.

a. 50 grams copper
b. 50 grams lead
c. 50 grams ethyl alcohol

D. In lab, 100 grams of iron nails are submerged in 100 grams of 20 °C water. The nails undergo a temperature change of 70 °C. Equate the heat gained by the water to the heat lost by the nails and determine the temperature change of the water.

Bonus (2 points possible): What is the final temperature of the water?