HEAT CALCULATIONS

Name _____ Section _____

1. A 2 inch piece of a two-layer chocolate cake with frosting provides 1670 kJ of energy. What is this in Calories? What is this in calories?
   (400 Calories, 400,000 calories)

2. How much energy (in calories) is required to heat 400 mL of liquid water from 30^{o}C to 100^{o}C? (28,000 cal)

3. If the same amount of energy calculated in problem #2 were used to heat 400 grams of copper with an initial temperature of 30^{o}C, what would be the final temperature of the copper?

The specific heat of copper is 0.093 cal/(g ^{o}C)

4. Compare your answers in the above two questions. Water has a very large specific heat. How does a high specific heat affect the temperature change? What significance does this have on organisms living in a aqueous environment?

5. 74.8 Joules of heat is required to raise the temperature of 18.69 grams of silver from 10.0^{o}C to 27^{o}C. What is the specific heat of silver in J/(g ^{o}C)?
   (0.235 J/(g ^{o}C)