Name: _____ **Date:** _____

Chemistry *~ Ms. Hart* **Class:** Anions or Cations

2.12 Classwork/HW

1. The specific heat capacity of ethanol is 2.44 J/(g*°C). Why is more heat required to raise the temperature of a given mass of water a given number of degrees than is needed to raise the same mass of ethanol (a liquid) by the same number of degrees?

2. If the temperature of 34.4 g of ethanol increases from 25.0°C to 78.8°C, how much heat has been absorbed by the ethanol?

3. A 4.50-g nugget of pure gold absorbed 276 J of heat. What was the final temperature of the gold if the initial temperature was 25.0°C? The specific heat capacity of gold is 0.129 J/(g*°C)

4. A 155-g sample of an unknown substance was heated from 25.0°C to 40.0°C. In the process, the substance absorbed 5696 J of energy. What is the specific heat of the substance?

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4. A 155-g sample of an unknown substance was heated from 25.0°C to 40.0°C. In the process, the substance absorbed 5696 J of energy. What is the specific heat of the substance?

5. The temperature of 15 grams of water increased by 3.0°C. How much heat was absorbed by the water?
    1. 150 J
    2. 45 J
    3. 18.9 J
    4. 189 J

6. Approximately many joules of heat energy are released when 50 grams of water are cooled from 70°C to 60°C?
    1. 210 J
    2. 100 J
    3. 2,100 J
    4. 1,000 J

7. When 200 grams of water cools from 50.°C to 25°C, the total amount of heat energy released by the water is
    1. 210 J
    2. 21000 J
    3. 42000 J
    4. 1500 J

8. The temperature of 100 grams of water changes from 16°C to 20°C. What is the total number of joules of heat energy absorbed by the water?
    1. 210 J
    2. 168 J
    3. 42,000 J
    4. 1,680 J

9. Approximately how many joules of heat are required to raise the temperature of 20 grams of water from 30°C to 40°C?
    1. 134 J
    2. 168 J
    3. 420 J
    4. 840 J

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