Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chem R Pd. \_\_\_\_ Heat Calculations WS

Directions: For each of the following problems, be sure to show your work, use the proper units, and express your answer to the correct number of sig figs.

1. A sample of water is heated from 10.0°C to 15.0°C by the addition of 125 J of heat. What is the mass of the water?

**Formula:**

2. What is the total number of joules of heat needed to change 150. g of ice to water at 0°C?

**Formula:**

3. If 100.0 J are added to 20.0 g of water at 30.0°C, what will the final temperature of the water be?

**Formula:**

4. What is the total number of Joules absorbed by 65.0 g of water when the temperature of the water is raised from 25.0°C to 40.0°C.

**Formula:**

5. How much energy is required to vaporize 10.00 g of water at its boiling point?

**Formula:**

6. 25.0 grams of Substance X at its normal boiling point are converted to a gas by the addition of 34,400 J of heat. What is the heat of vaporization for Substance X?

**Formula:**