

Name _____

Honors Calorimetry Homework

Solve the following calorimetry problems Show all work for full credit.

(Determine correct formula needed, show numerical setup, give answer with proper unit):

1) How many joules will be released if 150. grams of water increases in temperature from 40.0°C to 65.0°C?

6) An ice cube tray filled with 10 spots each holding 25.0 mL of water is placed in a freezer. Calculate the heat energy that must be removed in order to get all the water frozen?

2) How much heat energy must be absorbed by 200.0 g of ice at 273 K in order to melt the sample?

7) The temperature of 50.00 grams of water was raised to 50.0°C by the addition of 1100. joules of heat energy. What was the initial temperature of the water?

3) How many joules are needed to raise the temperature of 200.00 grams of water by 20.0°C? *How many kilojoules is this?*

8) How many grams of water can be heated with a temperature change of 75.0°C with the absorption of 4.50 kJ?

4) How much heat energy would an 80.00 g sample of liquid water at 100.°C need to absorb in order to turn it all to steam?

9) An unknown substance released 520 J of heat energy when 25.0 grams was burned. The starting temperature was 23.0°C and the ending temperature was 39.0°C. What is the specific heat capacity of this unknown substance?

5) What is the final temperature after 80.0 J is absorbed by 10.0 g of water at 25.0°C?