

Calorimetry

Name: _____

1) 0.100 moles of NaOH are dissolved in 150 grams of water inside a calorimeter. The temperature goes from 23.0 °C to 30 °C. Find the heat transfer (Q) for the water.

2) When a 4.25 g sample of solid NH_4NO_3 dissolves in 60 g of water in a calorimeter, the temperature drops from 21 °C to 16.9 °C. Calculate the heat (Q) lost by the water.

3) An 18.7 g sample of platinum metal increases in temperature by 2.3 °C when 5.7 J of heat are added. What is the specific heat of platinum?

4) When a hot, 30g piece of iron is dropped into a calorimeter of water, the temperature increased by 12.3 °C and the heat given off was 14.4 kJ. What was the mass of water in the calorimeter?

5) How much heat energy is needed to raise the temperature of a 425 g aluminum baking sheet from room temperature, 25 °C, to a baking temperature of 200 °C (the specific heat of aluminum is 0.897 J/g °C)?