Revised August 2012

HONORS WORKSHEET 1c: Specific Heat Capacity

1. If 30.0 grams of silver absorbs 375 J of energy and the original temperature of the silver is 23.0 degrees Celsius, calculate the final temperature of the silver. (3)

   Specific heat capacity of silver = 0.235 J/gK

2. How much energy is absorbed when 300. g of water, increases in temperature from 22.0 ^{o}C to 90.0 ^{o}C? (2)

   Specific heat capacity of water = 4.18 J/gK

3. How much energy (in kJ) is released when 100. g of a metal with a specific heat capacity of 0.44 J/gK cools from 105^{o}C to 65^{o}C? (2)

4. The temperature of a piece of metal that has a specific heat capacity of 0.235 J/gK falls by 120 K and in the process it releases 2001 Joules of energy. What is the mass of the metal? (2)

5. Given the following specific heat capacities, use the data below to identify substance X.

Substance	Specific Heat Capacity /$Jg^{-1}K^{-1}$
Aluminum	0.900
Carbon	0.720
Water	4.19
Copper	0.391
Mercury	0.143

A sample of substance X that has a mass of 13.66 g is heated to the point where it has absorbed 199.74 J of energy and its temperature has risen from 298K to 334K. (2)