SPECIFIC HEAT PRACTICE

Name: _____ Date:_____ Pd:_____

$Q = m * C_p * \Delta T$

Solve the following problem sets using the above formula. Show all work and include correct units.

1. How much ***heat*** is absorbed to raise the temperature of 3.50 grams of water from 12.0 °C to 35.0 °C? (C_{water} = 1.00 cal/g°C)

2. How much ***heat*** is required to heat 20.0 grams of lead from 20.0 °C to 150. °C if the specific heat of lead is 0.0300 cal/g°C?

3. The temperature of a 100. gram piece of copper is reduced from 103 °C to 3.00 °C. How much ***heat*** is released in this chemical reaction? (C_{copper} = 0.090 cal/g°C)

4. A 50.0 gram sample of a metal requires 660. calories of heat to have its temperature rose from 20.0 °C to 80.0 °C. What is the ***specific heat*** of this metal? What is the ***identity*** of this metal?

5. How many ***grams*** of water would require 2.20 x 10^4 calories of heat to raise its temperature from 34.0 °C to 100. °C? (C_{water} is 1.00 cal/g°C)

6. 8750 Joules (J) of heat is applied to a piece of aluminum, causing a 56.0 °C increase in its temperature. What is the ***mass*** of the aluminum with a specific heat of 0.9025 J/g°C?

7. How many ***degrees Celsius*** would the temperature of a 450. gram sample of iron increase by if 7600 Joule (J) of heat is applied? (C_{Iron} = 0.4494 J/g^{o}C)

8. A 250. gram sample of water with an initial temperature of 98.8 ^{o}C releases 7500 Joules of heat. What is the ***final temperature*** of the water with a specific heat of 4.184 J/g°C? ($\Delta T = T_f - T_i$)

9. 4786 Joules of heat is applied to a 70.4 gram sample of an unknown metal, with an initial temperature of 23.0 ^{o}C. What is the ***specific heat*** of the metal if the final temperature is 89.5 ^{o}C? What is the ***identity*** of this unknown metal?

10. The temperature of a 59.2 gram sample of a certain metal increases by 113 ^{o}C as it absorbs 3500 Joules of heat. What is the ***specific heat*** of the metal? What is the ***identity*** of the metal?