**Name: Period: Seat#:**

**Worksheet #2**

**Conceptual Questions**

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| 1. Explain the difference between heat and temperature. | 1. Define specific heat and provide the units for it. | | 1. Which will heat up *slower*> Explain why. Metal A – specific heat = 0.35   Metal B – specific heat = 0.12 |
| 1. Draw a generic graph for an endothermic reaction.Is energy being lost or gained? | | 1. Draw a generic graph for an exothermic reaction. Is energy being lost or gained? | |
| 1. Define convection. | 1. Define conduction. | | 1. Define radiation. |

**Mathematical Questions**

* Identify the variables involved
* Show plugging in the variables to the correct places in the equation
* Get an actual answer, including units! Box your answer!
* Don’t forget - you must show units and any conversions that might be involved.
* You can either rearrange your equation before you plug in your variables, or after. Do what works for you!
* Some answers are provided at the end. They are underlined.

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| 1. Find the amount of heat (Q) needed to raise the temperature of 5.00 g of a substance from 20.0°C to 30.0 C if the specific heat of the substance is 2.01 J/g°C. *100.5 J*   Variables  Q = ?  m = 5.00 g  C = 2.01 J/g C  Δ T = 10 C | 1. A metal with a specific heat of 0.780 J/g°C requires 45.0 J of heat to raise the temperature by 2.00°C. What is the mass of the metal? *28.8 g* |

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| 1. A metal with a specific heat of 0.70 J/g°C and a mass of 8.00 g absorbs 48.0 J of heat. What will be the temperature change of the metal? *8.57°C* | 1. What is the specific heat of a substance that absorbs 2.5 x 103 joules of heat when a sample of 1.0 x 104 g of the substance increases in temperature from 10.0°C to 70.0°C? *C = 0.0042 J/g°C* |
| The table below shows the specific heats for some common substances. Use this table for the following questions.   |  |  | | --- | --- | | **Substances** | **Specific Heat (J/g°C)** | | Aluminum | 0.90 | | Copper | 0.38 | | Gold | 0.13 | | Ice | 2.09 | | Iron | 0.450 | | Lead | 0.130 | | Steam | 1.87 | | Water | 4.18 | | 1. How much heat (Q) is needed to raise the temperature of 8.00 g of lead by 10.0°C? *10.4 J* |
| 1. The temperature of a 250.0 g ball of Iron increases from 19.0°C to 32.0°C. How much heat did the iron ball gain? *1462.5 J* | 1. The temperature of a 100.0-g block of ice increases by 3.00°C. How much heat does the ice receive?   *627 J* |
| 1. Ten grams of steam absorbs 60.0 J of heat. What is the temperature increase of the steam? *3.2°C* | 1. A piece of lead loses 78.0 J of heat and experiences a decrease in temperature of 9.0°C. What is the mass of the piece of lead? *66.7 g* |