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| Review #1 For Thursday’s Test  CλeMis+ry: http://genest.weebly.com  Stop in for help every day at lunch and Tues, Weds this week after school! |  | Name\_\_\_\_\_\_\_\_\_\_\_\_\_  Period\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Convert 45,000 joules into Calories (spelled with a capital). [useful numbers for this are in your notebook or the top of the next page of this handout]]
2. In today’s lecture we dropped metal into water. The water went temperature went from \_\_\_\_ °C to \_\_\_\_ °C. The mass of the water was \_\_\_\_\_\_\_\_ grams. We know that the Cp of water (using joules) is \_\_\_\_\_\_\_\_ (including units).

**Calculate the amount of heat that entered the water.**

The following situations all were shown during lecture in class today. In each case, the system has been underlined in the description.

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| 1. Dropping hot aluminum into cold water | Choose the **ONE** part of the heating curve best fits the situation described at left?  ( A to B ) ( B to A ) (B to C )  ( C to B ) ( C to D ) ( D to C) (D to E) (E to D ) (E to F ) ( F to E)  http://www.kentchemistry.com/images/links/matter/image002.jpg | Fill in the energy diagram. Don’t forget to write a word in the circle to define what the system is. new EBC |

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| ***You will always be given these numbers on tests and quizzes.*** |  |
| **4.184 kilojoules = 4184 joules = 1000 calories = 1 Calorie** | |

1. In today’s lecture we dropped metal into water. The heat that entered the water was calculated in Question #1, above, to be \_\_\_\_\_\_\_\_\_\_\_\_ J. The heat that left the aluminum must therefore\* be \_\_\_\_\_\_\_\_J. The mass of the aluminum was \_\_\_\_\_\_ grams. From looking up the specific heat, we know that Cp for aluminum is always \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(don’t forget units).

**Calculate the ∆T for the Aluminum.**

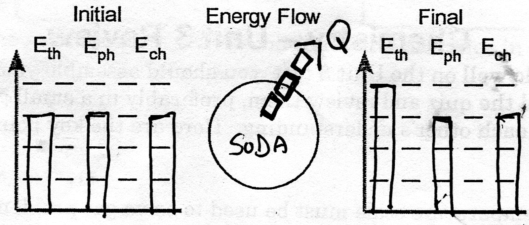
\* It is safe to assume that all of the joules gained by the water were lost by the hot aluminum, according to the Law of Conservation of Energy

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|  | 1. Stop. Read the four images at the left. They describe data for dropping hot metal into water. Use Q = m Cp ∆T to calculate how much heat entered the water. 2. How much heat left the metal? |

1. If the metal in the preceding two questions above had a mass of 24 grams, calculate the Cp of the metal.
2. Convert 123 cal into J.

For each item below indicate whether it applies to HEAT or TEMPERATURE

1. \_\_\_\_\_ Can be measured by inserting a thermometer
2. \_\_\_\_\_ Can be measured by holding water nearby and then multiplying masswater x Cpwater x ΔTwater
3. \_\_\_\_\_ one common unit for measuring this is degrees celsius
4. \_\_\_\_\_ one common unit for measuring this is kelvins
5. \_\_\_\_\_ one common unit for measuring this is joules
6. Convert 123 calories into Calories.
7. Which contains more energy? ( 1 Calorie / 1 calorie )
8. Which contains more energy? ( 1 joule / 1 calorie )
9. If a 3.1g ring made of unknown metal is heated using 10.0 calories, its temperature rises 17.9°C. Calculate the specific heat of the ring.
10. A can of cold soda warms as it is left on the counter.



List two **mistakes** in the energy diagram shown above

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. A gas filled weather balloon with a volume of 30.0 L is released at sea level at 100.1 kPa and 18.0°C. Find the volume the balloon will be at maximum altitude where the temperature is 241.0 kelvins and the pressure is 0.604 atm.