**CW/HW – Heat Problems**   **q = mC∆T**

Name Period: 1 3

1. Temperature conversions:
   1. Convert 80.00°F to °C.
   2. Convert 100.0°C to °F.
   3. Convert -140.5°C to K.
   4. Convert -40.00°F to °C and to K.
2. Practice these conversions:
   1. Convert 65.0 calories (cal) to kilocalories (Cal)
   2. A serving of Hot Fries has 150. kilocalories (Cal). How many calories does it have?
   3. A 24oz. bottle of Coca Cola has 291 Cal. How many joules (J) is that?
3. How much heat energy, in joules, is required to heat 870.0g of Al from 35.0°C to 100.°C?
4. How much heat, in joules is released when 65.0g of steam is cooled from 250.°F to 223°F?
5. What mass of gold takes -83.00J of energy to change temperature from 80.00°C to 47.00°C? Is this process endothermic or exothermic?
6. If 7240.0J of heat is added to a 762g block of metal, the temperature increases by 14.7°C. Calculate the specific heat capacity of the metal.
7. Three 75.0g samples of copper, silver, and gold are available. Each of these samples is initially at 24°C, and then 2000. J of heat is applied to each sample. Which sample will end up with the highest temperature
8. Determine the change in temperature when 60.0g of diamond is heated using 440. calories. If the original temperature of the diamond was 70.55°C, what is the final temperature?