**Name: Period: Seat#:**

**Worksheet #7**

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|  | 1. Which area of the graph represents the liquid phase?
 | 1. Which area of the graph represents the gas phase?
 | 1. A phase change from Phase A to Phase B is known as what?
 |
| 1. A phase change from Phase B to Phase C is known as what?
 | 1. A phase change from Phase C to Phase A is known as what?
 | 1. At 30 atmospheres pressure, the melting point of this substance is what?
 |
| 1. What phase change occurs when the temperature of the substance is held constant at -15 ºC, and the pressure increases from 1 atmosphere to 30 atmospheres?
 | 1. A phase change from Phase B to Phase A is known as what?
 | 1. A phase change from Phase C to B is known as what?
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| 1. Above 200°C what is the only phase that cannot exist for this substance?
 | 1. The triple point of this substance occurs at what temperature and pressure?
 | 1. At 30 atmospheres pressure, the boiling point of this substance is what?
 | 1. At -50°C, which phase cannot exist for this substance?
 |
| 1. Explain what the triple point is.
 | 1. Explain what the critical point is.
 |
| 1. Determine the final temperature when 18.0 g of ice at -10.0 °C mixes with 275.0 grams of water at 60.0 °C *51.1°C*
 |
| 1. Determine the final temperature when 10.0 g of steam at 100.0 °C mixes with 500.0 grams of water at 25.0 °C. *37.07°C*
 |
| 1. You have an unknown quantity of ice. You put all the ice into a cup with 110g of water. If the water temperature decreases by 14 degrees, and the final temperature is 12°C, what was the mass of the ice that you put in the cup? *16.76 g*
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| 1. How much energy does it take to heat a 3.45 mole sample of silver from 15°C to 120°C if the specific heat of silver is 0.240 J/g°C? *9378.18 J*
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| 1. A 75 g piece of copper (which has a molar heat capacity of 24.8 kJ/mol•K) is heated to 68°C and dropped into a calorimeter containing water (specific heat capacity of water is 4.18 J/g°C) initially at 20°C. The final temperature of the water is 26.5°C. Calculate the mass of water in the calorimeter. *44698 g*
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| 1. If the temperature of a 50.0 gram block of aluminum increases by 10.9K when heated by 500 Joules, calculate the specific heat of the aluminum block and the molar heat capacity of the aluminum block. *0.917 J/g°C, 24.8 J/mol°C*
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| 1. The specific heat of gold is 0.128 J/g•K. Calculate the molar heat capacity. *25.21 J/mol•K*
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| 1. Calculate the amount of heat necessary to melt 27 grams of ice if the molar heat of fusion of ice is 6.009 kJ/mol. Use the molar heat value given here (not regular latent heat in grams), and get your answer in kJ. *9.01 kJ*
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| 1. The specific heat capacity for silver is 0.24 J/g°C. Calculate the molar heat capacity of silver. *25.89 J/mol•K*
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| 1. If it takes 585 J of energy to raise the temperature of 125.6g Hg from 20°C to 53.5°C. Calculate the specific heat capacity and the molar heat capacity of Hg. *0.139 J/g°C, 27.89 J/mol°C*
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| 1. If the molar heat capacity of Magnesium is 24.89 J/mol•K, calculate the energy required to heat 35 grams of magnesium from 30°C to 55°C. *895.9 J*
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| 1. B2O3 + 3H2O 🡪 3O2 + B2H6 ∆H = +2035 kJ
	1. Is this reaction endo or exothermic?
	2. Rewrite the equation with the heat written as a reactant or a product based on your answer to part A
	3. How much energy is involved when 15grams of B2O3 is reacted, and is it absorbed or released? *436.6 kJ*
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| 1. If the ∆Hrxn for the combustion of tetracarbon decahydride is -5756 kJ, how much energy is released when 50 grams of the fuel is combusted? *-2475.9 kJ*
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