Name _____ Date _____

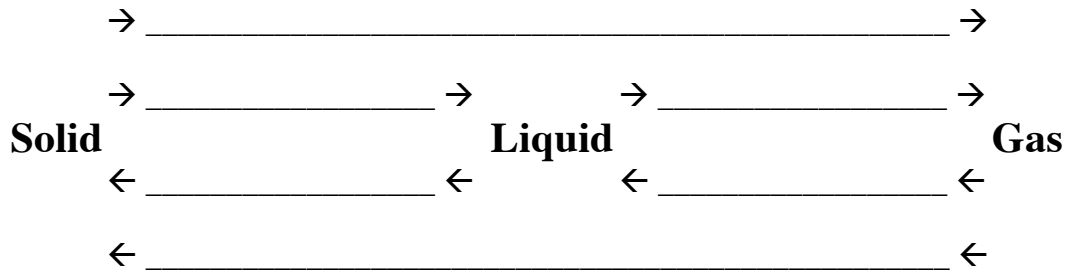
Matter & Energy Review Sheet

Quantitative Chemistry

1. Table – Describe the volumes & shapes of the phases of matter below (definite or not).

Phase	Volume	Shape
Gas		
Liquid		
Solid		

2. Diagram – Complete the names of the processes in the diagram below.



3. Identify the following as physical (P) or chemical (C) changes.
   _____ a. Water boils in a pot.
   _____ b. Wood is cut with an axe.
   _____ c. Two clear solutions are mixed, and a yellow solid is formed.
   _____ d. A girl has her hair permed at a salon.

4. Identify the substances below, and place checks in the appropriate columns. Each substance should have 2 columns checked.

Substance	Pure Substance	Mixture	Element	Compound	Homogeneous	Heterogeneous
A Pond						
Silver						
Silver Nitrate						
Fruit Punch						

5. Define:
   a. Filtration –

   b. Distillation –

   c. Energy –

6. Briefly describe the differences between the following:

   a. Intensive vs. Extensive Properties

   b. Physical vs. Chemical Properties

   c. Endothermic vs. Exothermic Reactions

7. Convert the temperatures below.

    a. 87.0°F to Celsius

    b. 289.0 K to Fahrenheit

8. Use fence-posting to convert the following energy values to the units specified below.

    a. 45.8 joules to kilojoules

    b. 0.0098 kilocalories to joules

Solve the following problems. Be sure to show your work, and use significant figures!

9. How much energy (in joules) is required to raise the temperature of 177 g of copper from 33°C to 87°C? The specific heat capacity of copper is 0.39 J/g°C.

10. Calculate the specific heat capacity of a substance if it takes 201.6 calories to raise the temperature of a 395 g sample by 5.0°C.

11. What is the mass in grams of a sample of gold if it takes 0.30 kJ to raise its temperature from 25.0°C to 27.5°C? The specific heat capacity of gold is 0.13 J/g°C.

12. Calculate the temperature change that occurs when 7890 J of energy is added to 1.96 lbs of water.