

## IPC Final Exam Review

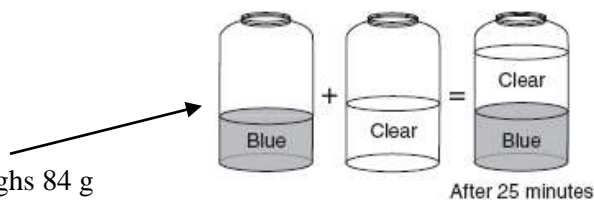
Name: \_\_\_\_\_

**Complete this review and turn it into your teacher by \_\_\_\_\_ for a 10 point bonus on the final exam. IT MUST BE 100% COMPLETE TO RECEIVE THE BONUS!**

### DENSITY, VISCOSITY, and BUOYANCY

Circle the object with the greater density

1. ice, water
2. salt water, distilled water
3. gaseous CO<sub>2</sub>, dry ice(frozen CO<sub>2</sub>)
4. blue liquid, clear liquid –see picture
5. 12 ml that weighs 46 g, 33 ml that weighs 84 g



Solve the following problems. **D=M/V**

1. A liquid at 24 °C was determined to have a density of 1.3 g/ml. What mass would 50.0 ml of this liquid have?
2. What volume would 55 grams of wood occupy? (density of wood = 0.987 g/cm<sup>3</sup>)
3. Calculate the density of an object that has a mass of 237 grams and measures 5cm x 7cm x 3cm.

Fill in the table.

object	mass	volume	density-show work in box
A	55 grams	65 cm <sup>3</sup>	
B	10 grams	2cm x 2cm x 3cm	
C	23 grams	15 mL	
D	1.7 kg	95 mL	

### PHYSICAL CHANGE VS CHEMICAL CHANGE

Mark P for a physical change and C for a chemical change.

- \_\_\_\_\_ 1. Dew forms on the grass when the temperature drops at night.
- \_\_\_\_\_ 2. A bolt of lightning causes oxygen to change into ozone.
- \_\_\_\_\_ 3. Acid rain erodes away the face of a statue.
- \_\_\_\_\_ 4. Separating salt into its elements.
- \_\_\_\_\_ 5. Tomato sauce expands in the freezer causing the container to crack.
- \_\_\_\_\_ 6. Sand is purified by filtration.
- \_\_\_\_\_ 7. An elodea plant grows 2 inches in one week.
- \_\_\_\_\_ 8. Separating salt from water by evaporation.

List 3 physical and chemical properties in the chart below:

Physical Properties	Chemical Properties

Label the following resources as renewable (can be used again and again) or non-renewable (will eventually run out).

Fossil fuels

Solar power

Wind

Hydroelectric

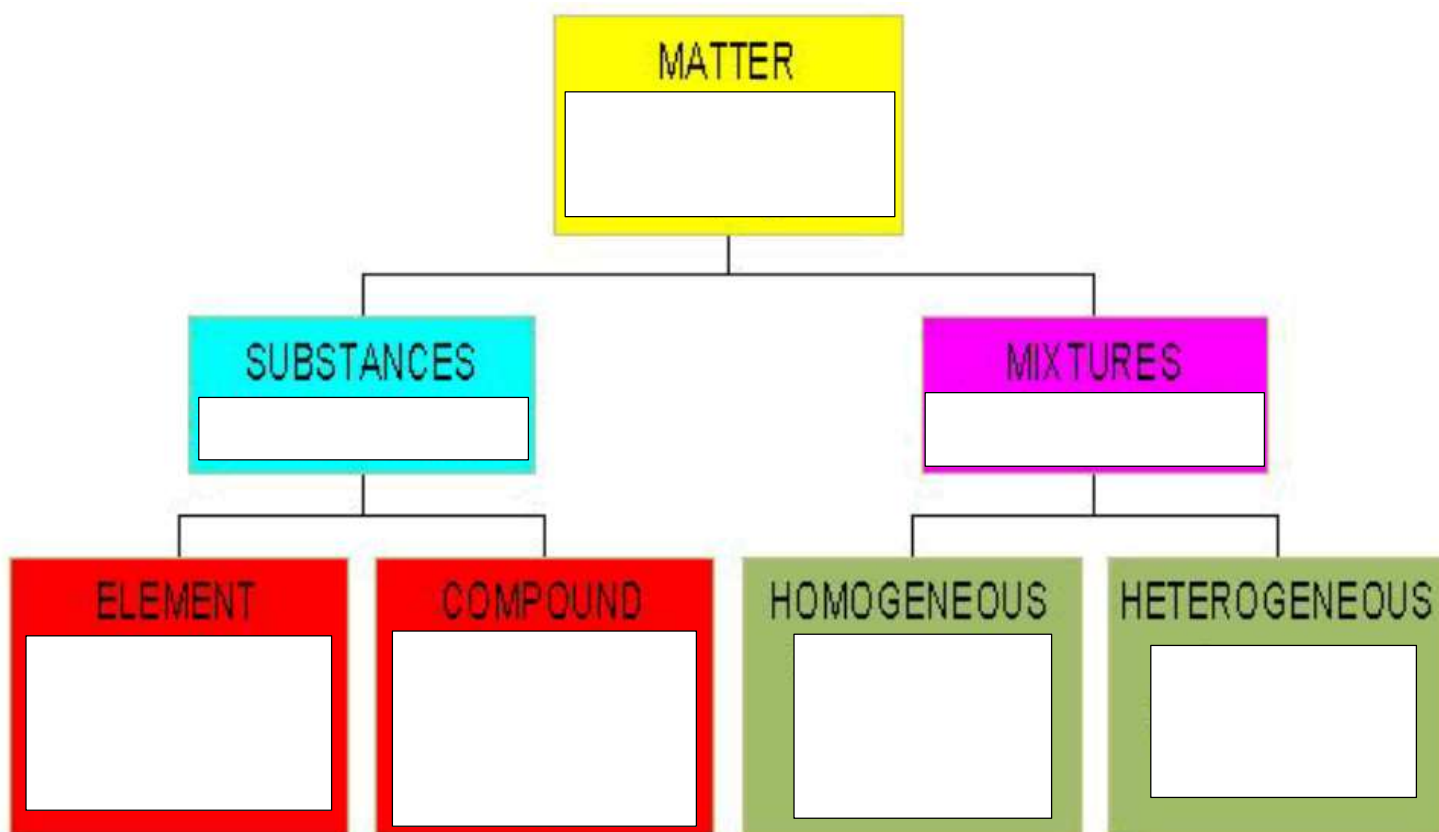
Geothermal

Nuclear


Oil

Coal

Write the definition of each of the following terms in the correct box below:



## ATOMIC STRUCTURE AND THE PERIODIC TABLE

element	atomic #	protons	neutrons	electrons	mass #
chlorine-37					
${}^4_2\text{He}$					
lithium-6					
${}^{26}\text{Mg}$					
zinc-67					
					

1. How do you determine the number of valence electrons from the periodic table?

2. How do you determine the charge or oxidation # from the periodic table?

	# of valence e-	charge of ion
a. oxygen	_____	_____
b. phosphorous	_____	_____
c. aluminum	_____	_____
d. strontium	_____	_____

3. **Tell which column number each is located in and give an example:**

Alkali metal:

Alkaline Earth:

Transition metal:

Metalloid:

Noble gas:

Halogen:

4. **Define and give an example for each of the following:**

Isotope:

Ion:

Atomic number:

Mass number:

Law of conservation of mass:

Endothermic reaction:

Exothermic reaction:

## WRITING AND NAMING COMPOUNDS (BONDING)

*Name the following:*

$K_2SO_4$  \_\_\_\_\_

$Na_2CO_3$  \_\_\_\_\_

$CuCl_2$  \_\_\_\_\_

$N_2O_5$  \_\_\_\_\_

$MgO$  \_\_\_\_\_

$SO_2$  \_\_\_\_\_

*Write the formula:*

iron (III) chloride \_\_\_\_\_

sodium hydroxide \_\_\_\_\_

magnesium phosphate \_\_\_\_\_

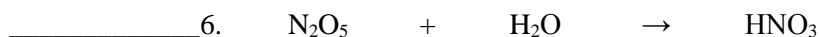
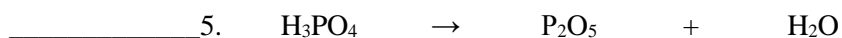
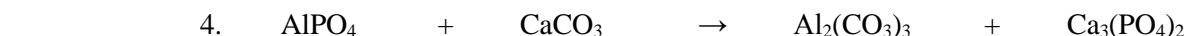
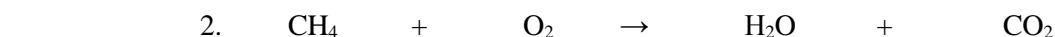
aluminum nitride \_\_\_\_\_

oxygen trichloride \_\_\_\_\_

strontium nitrate \_\_\_\_\_

## BALANCING/CONSERVATION OF MASS/TYPES OF REACTIONS

Balance the following and identify the type of reaction.



## SOLUTIONS/ACIDS AND BASES

Explain what is meant by "water is polar."

What are some ways that you can increase the solubility of a solid?

What is the name of the scale used to measure how acidic or basic a solution is?

**List the properties of acids.**

taste \_\_\_\_\_  
pH range \_\_\_\_\_  
litmus color \_\_\_\_\_  
ion produced \_\_\_\_\_

**List the properties of bases.**

taste \_\_\_\_\_  
pH range \_\_\_\_\_  
litmus color \_\_\_\_\_  
ion produced \_\_\_\_\_

Define:

Solute-

Solvent-

Saturated-

Unsaturated-

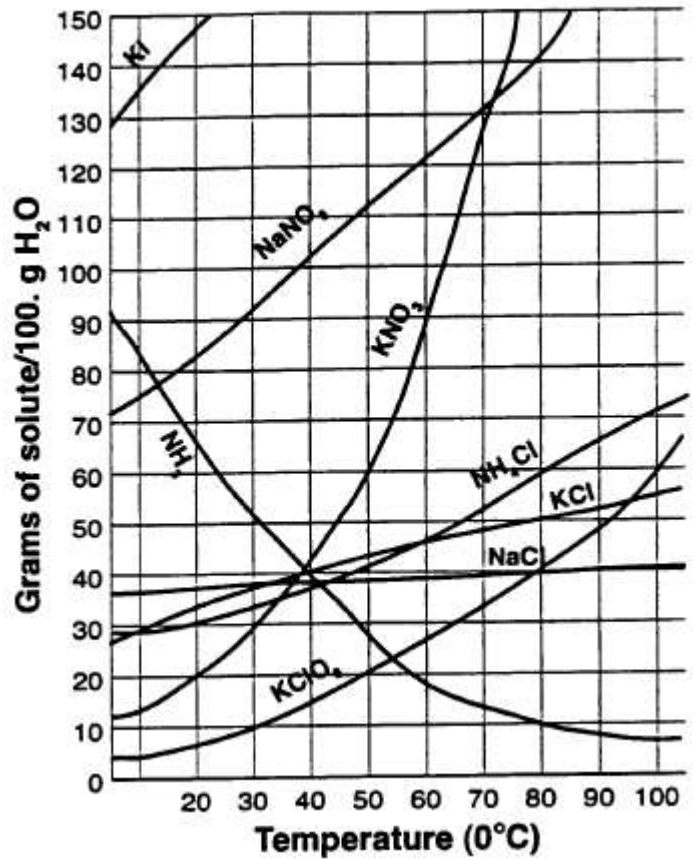
Supersaturated-

How much  $\text{NaNO}_3$  is needed to make a saturated solution at  $80^\circ\text{C}$ ,?

At  $50^\circ\text{C}$ , which salt is the least soluble?

At  $0^\circ\text{C}$ , how much  $\text{NaCl}$  can be dissolved?

At  $0^\circ\text{C}$ , how much  $\text{KNO}_3$  can be dissolved?

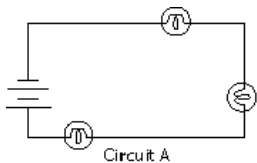


## ELECTRICITY AND CIRCUITS

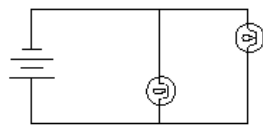
### **V=IR**

The current flowing through a light bulb is 0.75 A and the potential difference across the light bulb is 120 V. How much resistance does the light bulb have?

What is the size of the current that flows through a 100-W light bulb if it is connected to a 110-V source?



Circuit A



Circuit B

Figure 21-2

In Figure 21-2, circuit \_\_\_\_\_ is wired in series.

In Figure 21-2, circuit \_\_\_\_\_ is wired in parallel.

In Figure 21-2, circuit \_\_\_\_\_ is the type of circuit used when one burned-out bulb causes an entire string of lights to go out.

**Define the following terms and give an example of each:**

Conductor-

Insulator-

Resistor-

## NATURE OF SCIENCE

A scientist conducted an experiment on spiders. Five boxes of the same size contained 25 common house spiders each. In one box, the scientist sprayed Raid for 5 seconds. In another box, the scientist placed a poisoned sticky trap inside. The third box had poison spider food placed inside. In the 4<sup>th</sup> box, a new natural spray was applied for 5 seconds. The last box had nothing added. The following day, the scientist counted the number of spiders that remained alive and free.

What is the question the scientist is trying to answer? \_\_\_\_\_  
\_\_\_\_\_

What is the control? \_\_\_\_\_

What is the independent variable? \_\_\_\_\_

What is the dependent variable? \_\_\_\_\_

What are constants from this experiment? \_\_\_\_\_

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What could be a possible hypothesis for this experiment? \_\_\_\_\_  
\_\_\_\_\_

The picture to the right shows a graduated cylinder with a marble and after the marble was removed. Calculate the volume of the marble.

