

**CHEM 1**  
**Problem Set Ch. 2**

answer key

1. Briefly distinguish between periods and groups on the periodic table.

2. Give the family name of the group in which the following elements belong.

a) K \_\_\_\_\_ c) I \_\_\_\_\_

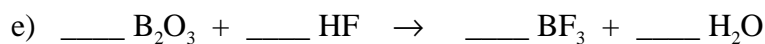
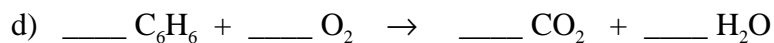
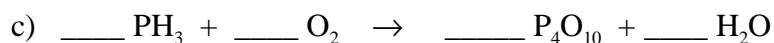
b) Ag \_\_\_\_\_ d) Ne \_\_\_\_\_

3. Indicate whether the following compounds are ionic or covalent (molecular).

a)  $\text{CF}_4$  \_\_\_\_\_ c)  $\text{Ca(OH)}_2$  \_\_\_\_\_

b)  $\text{LiCl}$  \_\_\_\_\_ d)  $\text{NCl}_3$  \_\_\_\_\_

4. Balance the following equations.



5. Describe the difference between a cation and an anion.

6. To what classes of matter (element, compound, or mixture) do the following laws apply:

a) law of mass conservation \_\_\_\_\_

b) law of definite composition \_\_\_\_\_

c) law of multiple proportions. \_\_\_\_\_

7. Briefly distinguish between an ionic compound and a covalent compound.

## 8. Naming Ionic and Covalent Compounds.

Give the names of the following ionic compounds	Write the formulas for the following ionic compounds
$\text{Al}(\text{NO}_3)_3$	calcium hydroxide
$\text{HgI}_2$	magnesium nitride
$\text{Fe}_2(\text{CrO}_4)_3$	copper(I) cyanide
$\text{NH}_4\text{NO}_2$	silver nitrate
$\text{Li}_2\text{CO}_3$	potassium bromide
$\text{SrO}$	lead(IV) bromide
$\text{Ba}(\text{OH})_2$	tin(II) sulfide
$\text{Mg}_3\text{P}_2$	potassium phosphate
$\text{CoF}_3$	mercury(I) iodide
$\text{Ca}(\text{C}_2\text{H}_3\text{O}_2)_2$	ammonium hydroxide
$\text{PbCl}_4$	potassium dichromate
$\text{Cu}_2\text{S}$	lead(II) carbonate
$\text{KMnO}_4$	barium sulfite
$\text{Na}_2\text{HPO}_4$	lithium phosphide

Give the name the following covalent compounds	Write the formula for the following covalent compounds
$\text{SeBr}_4$	carbon monoxide
$\text{F}_2\text{O}_2$	nitrogen triiodide
$\text{IBr}_2$	tetraphosphorus decasulfide
$\text{OF}_2$	disulfur dichloride
$\text{N}_2\text{S}_5$	dichlorine heptoxide
$\text{Br}_3\text{O}_8$	diphosphorus tetraoxide
$\text{CS}_2$	dinitrogen monoxide
$\text{S}_4\text{N}_4$	selenium hexafluoride