Module 9 Review

- Know what a polyatomic ion is
- Be able to write the formula of a molecule that has polyatomic ions
- Be able to write the name of a molecule given its formula
- Know what VSEPR is and how it causes some molecules to be three-dimensional
- Know the five molecular shapes and the bond angle for each
- Be able to determine the shape of a molecule using its Lewis diagram
- Classify molecules as ionic, polar covalent, or purely covalent
- Determine which substances will dissolve in water
- Know the difference between an -ic ending and an -ous ending for a metal ion
- Honors – Write a balanced equation using molecules that contain polyatomic ions

You may use the ion list and the electronegativity chart on the test.

Practice:

1. Write the formula:
   a. Ammonium sulfate
   b. Magnesium hydroxide
   c. Sodium cyanide
   d. Calcium acetate
   e. Aluminum nitrate
   f. Lithium carbonate
   g. Gallium chromate
   h. Magnesium phosphate
   i. Ammonium oxide

2. Write the name of each molecule. Use the "ic/ous" system if necessary.
   a. $(NH_4)_4Br$
   b. $CuOH$
   c. $Be(CN)_2$
   d. $KC_2H_3O_2$
   e. $Fe(ClO_3)_2$
   f. $Co(NO_3)_2$
   g. Na_2CO_3
   h. $PbSO_3$

3. Determine if each molecule is:
    a. Ionic or covalent.
    b. If it's covalent:
        i. is it polar or purely covalent?
        ii. What's its shape?
        iii. What are its bond angles?
    c. Will it dissolve in water?

a. BrCl

b. SiO_2

c. $AsCl_3$

d. CH_2O

e. $MgCl_2$

f. $SiFCl_3$

g. PF_3

h. CaO

i. H_2S