**Nomenclature and the Mole Review**

**Chemical Compound Naming & Formula Writing Practice**

**Naming Ionic Compounds**

1. NaCl \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. CaCl2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. MgO \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Li2S \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. KI \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Writing Ionic Formulas**

1. Calcium oxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Beryilium chloride \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Sodium sulfide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Magnesium phosphide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Potassium fluoride \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Naming Covalent Compounds**

1. SO3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. N2S \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. PH3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. BF3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. P2Br4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Writing Covalent Formula**

1. Nitrogen tricholoride \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Boron monocarbide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Dinitrogen trioxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Phosphorous pentafluoride \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Sulfur dibromide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Mole, Percent Composition and Empirical Formula Problems**

1. What is the gram molecular mass of PCl5?
2. Calculate the molar mass of the following compounds:   
     
   MgCl2 –  
   H2SO4 –  
   C3H6O3 –  
   Ca3(PO3)2 –  
   Be(OH)2 –
3. How many moles are 3.52x1024 molecules of H2O?
4. How many moles are 1.50x1023 molecules of NH3?
5. How many moles are 4.81x1024 atoms Li?
6. How many moles in 500g of hydrogen?
7. How many moles in 0.000264g Li2HPO4?
8. How many moles in 187g Al?
9. How many moles in 333g SnF2?
10. What is the mass of 3.0 mol of O2?
11. What is the mass of 0.720 mol Be?
12. What is the mass of 2.40 mol N2?

1. What is the mass of 0.160 mol H2O2?
2. What is the mass of 5.08 mol Ca(NO3)2?
3. Calculate the number of molecules in 60.0g NO2.
4. What is the percent composition of Ca(NO3)2?
5. Calculate the percent composition of each compound.
   1. 222.6g N combines completely with 77.4g O
   2. Hydrogen cyanide
6. Determine the empirical formula of the compound with the following percent composition: 42.9% C and 57.1% O.
7. What is the empirical formula of a compound that is 25.9% nitrogen and 74.1% oxygen?
8. For the compound KNO3, what is the:  
     
   molar mass:   
     
   percent composition K:

percent composition N:

percent composition O:

1. Write the empirical formula for the following:  
   N2H4   
     
   C2H8O4   
     
   SO2
2. What is the percent water in the hydrate CuSO4∙5H2O
3. Calculate the following for Compound X, which is 85.7% C and 14.3% H:  
     
   moles of C

moles of H -

empirical formula of Compound X -

molar mass of Compound X -

1. Calculate the following for a carbon compound that is 27.3% C, 4.5% H, 36.4% O, and 31.8% N and has a molar mass of 132.0 g/mol:  
     
   moles of C -

moles of H -

moles of O -

moles of N -