**Chemistry Unit 7 Stoichiometry Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Empirical Formula Worksheet**

Find the percent compositions of all of the elements in the following compounds:

1) CuBr2

 Cu: \_\_\_\_\_\_\_\_\_\_\_

 Br: \_\_\_\_\_\_\_\_\_\_\_

2) NaOH

 Na: \_\_\_\_\_\_\_\_\_\_\_

 O: \_\_\_\_\_\_\_\_\_\_\_

 H: \_\_\_\_\_\_\_\_\_\_\_

3) (NH4)2S

N: \_\_\_\_\_\_\_\_\_\_\_

H: ­­­\_\_\_\_\_\_\_\_\_\_\_

S: \_\_\_\_\_\_\_\_\_\_\_

4) N2S2

N: \_\_\_\_\_\_\_\_\_\_\_

S: \_\_\_\_\_\_\_\_\_\_\_

5) KMnO4

K: \_\_\_\_\_\_\_\_\_\_\_

Mn: \_\_\_\_\_\_\_\_\_\_\_

O: \_\_\_\_\_\_\_\_\_\_\_

6. HCl

H: \_\_\_\_\_\_\_\_\_\_\_

Cl: \_\_\_\_\_\_\_\_\_\_\_

7. Mg(NO3)2

Mg: \_\_\_\_\_\_\_\_\_\_\_

N: \_\_\_\_\_\_\_\_\_\_\_

O: \_\_\_\_\_\_\_\_\_\_\_

8. (NH4)3PO4

N: \_\_\_\_\_\_\_\_\_\_\_

H: \_\_\_\_\_\_\_\_\_\_\_

O: \_\_\_\_\_\_\_\_\_\_\_

P: \_\_\_\_\_\_\_\_\_\_\_

9. Al2(SO4)3

Al: \_\_\_\_\_\_\_\_\_\_\_

S: \_\_\_\_\_\_\_\_\_\_\_

O: \_\_\_\_\_\_\_\_\_\_\_

1. What is the empirical formula for a compound that contains 0.0134 g of iron, 0.00769 g of sulfur and 0.0115 g of oxygen? Name this compound.
2. Find the empirical formula for a compound that contains 32.8% chromium and 67.2% chlorine. Name this compound.
3. Find the empirical formula which contains 0.463 g thallium, 0.0544 g of carbon, 0.00685 g of hydrogen and 0.0725 g oxygen. Name this compound.
4. What is the empirical formula for a compound if 100.0 g of the compound contains 80.2 g zinc and the rest is oxygen? Name this compound.
5. Barry Uno has a sample of a compound which weighs 200 grams and contains only carbon, hydrogen, oxygen and nitrogen. By analysis, he finds that it contains 97.56 grams of carbon, 4.878 g of hydrogen, 52.03 g of oxygen and 45.53 g of nitrogen. Find its empirical formula
6. 200.0 grams of an organic compound is known to contain 98.061 grams of carbon, 10.381 grams of hydrogen, 32.956 grams of oxygen and the rest is nitrogen. What is the empirical formula of the compound? What is the molecular formula of the compound if its molar mass is 194.101? (You can skip using percents if you already have the masses.)
7. A compound containing 5.9265 % hydrogen and 94.0735 % oxygen has a molar mass of 34.01468 g/mol. Determine the empirical and molecular formula of this compound.
8. The empirical formula for trichloroisocyanuric acid, the active ingredient in many household bleaches, is OCNCl. The molar mass of this compound is 232.41 g/mol. What is the molecular formula of trichloroisocyanuric acid?
9. The molar mass of nicotine is 162.1 g/mol. It contains 74.0% carbon, 8.7 % hydrogen, and 17.3% nitrogen. Determine nicotine’s empirical and molecular formulas.