Name _____

Date _____ Pd ____

Chemistry – Unit 5 Worksheet 2
Empirical and Molecular Formulas

Show all your work when solving the following problems. Be sure to include units and label your answer.

1. Find the empirical formula of a compound containing 32.0 g of bromine and 4.9 g of magnesium.

2. What is the empirical formula of a carbon-oxygen compound, given that a 95.2 g sample of the compound contains 40.8 g of carbon and the rest oxygen?

3. A compound was analyzed and found to contain 9.8 g of nitrogen, 0.70 g of hydrogen, and 33.6 g of oxygen. What is the empirical formula of the compound?

4. A compound composed of hydrogen and oxygen is found to contain 0.59 g of hydrogen and 9.40 g of oxygen. The molar mass of this compound is 34.0 g/mol. Find the empirical and molecular formulas.

5. A sample of iron oxide was found to contain 1.116 g of iron and 0.480 g of oxygen. Its molar mass is roughly 5 x as great as that of oxygen gas. Find the empirical formula and the molecular formula of this compound.

6. Find the percentage composition of a compound that contains 17.6 g of iron and 10.3 g of sulfur. The total mass of the compound is 27.9 g.

7. Find the percentage composition of a compound that contains 1.94 g of carbon, 0.48 g of hydrogen, and 2.58 g of sulfur in a 5.00 g sample of the compound.

8. What is the % by mass of oxygen in $Mg(NO_3)_2$?