Chemistry I Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Empirical and Molecular Formula

1. What is the difference between an empirical formula and a molecular formula?
2. Of the following formulas, which one is not an empirical formula?
   1. C2H4
   2. CH
   3. CO2
   4. N2H3
3. Find the empirical formula for a compound containing 8.04% lithium and 91.96% bromine.
4. You know that a compound is 40.05% Sulfur and 59.95% Oxygen. What is its empirical formula?
5. The compound in number 4 has a molar mass of 240 g/mol. What is its molecular formula?
6. You know that a compound is made up of 42.07% Sodium, 18.89% Phosphorus, and 39.04% Oxygen. Find its empirical formula.
7. What is the empirical formula if you have 35.98% Aluminum and 64.02% Sulfur?
8. Styrene has an empirical formula of CH. Its molar mass is 104g/mol. What is its molecular formula?
9. Analysis of ibuprofen yields a molar mass of 206 g/mol and it is composed of 75.7% Carbon, 8.80% Hydrogen, and 15.5% Oxygen. What is its molecular formula?
10. Glycerol has a molar mass of 92.09 g/mol. Its percent composition is 38.12% Carbon, 9.75% Hydrogen, and 51.12% Oxygen. What is the molecular formula of glycerol?
11. You have a compound that is 57.1% Carbon, 38.1% Sulfur, the rest is hydrogen. The molar mass if 84 g/mol. What is the molecular formula?
12. Find the molecular formula of a compound that has a molar mass of 108.5 g/mol and is composed of 33.18% Carbon, 4.6% Hydrogen, 29.49% Oxygen, and 32.72% Chlorine.