

Name _____

Date _____ Pd _____

Chemistry – Unit 5 – WS 5 Empirical and Molecular Formulas

Answer the following on a *separate sheet of paper*.

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

1. 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.
2. 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 160 grams. Find the empirical formula and the molecular formula of this compound.
3. A chemical compound has a percent composition of 39.3 % Carbon, 6.7 % Hydrogen, and 54.0 % Oxygen. Find the empirical formula. If the compound has a molar mass of 180 grams, what is the molecular formula?
4. A molecule has a molecular mass of 396 grams. Its percent composition is 75.8 % As and 24.2% O. Find the empirical formula and molecular formula of the compound.
5. A sample of a compound contains 30.4% nitrogen and 69.6% oxygen by mass. Find the empirical formula of the compound. If the compound has a molecular mass of 92 grams, what is the molecular formula?

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