Chemical Formulas and the Mole Concept – Study Guide

*sections 3.2 in OpenStax*

**Chemical Formulas (section 3.2)**

Mass % of an element = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ x 100%

Explain why the empirical formula of the unknown gas in Example 3.12 is not C27O73?

The **chemical formula subscripts** of a compound tell you the mole ratio between elements in the compound.

1 mole of C2H6O contains \_\_\_\_\_moles C, \_\_\_\_\_ moles H and \_\_\_\_ moles O.

Explain how these mole ratios can be used as *conversion factors*?

***Watch the video tutorial on*** [***Chemical Formulas***](https://www.youtube.com/watch?v=PrRvmwkLs38&feature=youtu.be)

Now solve the following problems using dimensional analysis:

1. Calculate the grams of carbon in 2.76 moles of C2H6O.

*(ans: 66.3 g)*

A compound has the molecular formula C18H12N6. Its empirical formula is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Molecular Formula = Empirical Formula x *n***

What is “*n*” in this equation? How would you determine the numerical value of “*n*”?

**End of Chapter 3 Practice Problems**

#25, 33, 35, 37, 39, 41, 43

For detailed solutions to these problems, go to the [OpenStax website](https://openstaxcollege.org/textbooks/chemistry/resources) and download the “Student Answer and Solution Guide.”