

Section 7.4 Complete the following assignment in your class notebook  
with the heading: **Percent Composition and Empirical/Molecular Formula**

Show all work with, including correct units and sig figs. Box final answer. No work = No Credit!

1. Find the percent composition of plumbic bromide ( $\text{PbBr}_4$ ).
2. Determine the percent composition of calcium nitrate ( $\text{Ca}(\text{NO}_3)_2$ ).
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. Determine the empirical formula of a compound containing 3.6 g carbon, 0.90 g hydrogen, and 2.4 g oxygen.
5. Determine the empirical formula of a compound containing 1.37 g of barium, 0.32 g of sulfur, and 0.64 g oxygen.
6. A certain sugar has a chemical composition of 40.0% carbon, 6.6% hydrogen, and 53.3% oxygen.
  - a.) Determine the empirical formula for this sugar.
  - b.) Determine the molecular formula if its molar mass is found to be 180.0 g.
- 7.) If the empirical formula for nicotine is  $\text{C}_5\text{H}_7\text{N}$ , what is its molecular formula if its molecular mass has been determined to be 162.1 grams?