

## Formula Problems

Remember empirical versus molecular formulas.

Chemical formulas are based on what type of ratios?

Determine the molecular formulas from the empirical formula of the following compounds based on their molecular weights:

CH	78.13	HCO <sub>2</sub>	90.00
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NH <sub>2</sub> Cl	103	CH <sub>2</sub> O	180
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Percent by mass:

1. Find the percent by mass of Carbon in CH<sub>4</sub>.

2. Find the percent by mass of Hydrogen in PH<sub>3</sub>.

How do you determine an empirical formula?

- 1.
- 2.
- 3.
- 4.

3. Using the percent by mass data find the empirical formula of dichloroethane.  
Carbon 24.27%, Hydrogen 4.07%, Chlorine 71.65%.

What is the molecular formula for this compound if it has a molar mass of 98.96 grams per mole?

4. A compound that contains only nitrogen and oxygen is 30.4% nitrogen by mass. The molar mass of the compound is 92. What is the molecular formula of this compound?

5. A compound is found to be 40.92% Carbon, 4.58% Hydrogen, and 54.50 % Oxygen. What is the empirical and molecular formula for it if it has a molar mass of 176 g/mole?