Name _____ Period ____

Empirical and Molecular Formula Problems

1) Find the percent composition of the following compounds:

CH_4 PCl_3

BeH_2 H_2SO_4

2) What is the empirical formula for the following compounds:

C_2H_6 C_2H_2

C_6H_6 C_2H_4

H_2O H_2O_2

3) Given the following empirical formulas and their respective molar masses find the molecular formulas for each compound.

CH	78.13 g/mol	HCO_2	90.00 g/mol
NH_2Cl	103 g/mol	CH_2O	180 g/mol

4) A compound is found to contain 75% Carbon and 25% Hydrogen by mass. What is the empirical formula of the compound?

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

6) Acetylene is a gas frequently used in welding torches. It is 92.26% carbon and 7.74% hydrogen. Acetylene has a molar mass of 26.03 grams per mole. What is the molecular formula of acetylene?

7) Octane is an organic compound frequently used in gasoline. It is 84.09% carbon and 15.91% hydrogen. Octane has a molar mass of 114 g/mol. What is the molecular formula of Octane?

8) 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?