**Chemistry** **Name**
**Period** _____

# The Percent Composition Worksheet

**Calculate the percent composition of the compounds that are formed from these reactions:**

1. 9.03 g of Magnesium combine completely with 3.48 g of Nitrogen.

2. 29.0 g of Argon combine completely with 4.30 g of Sulfur.

3. 222.6 g of Sodium combine completely with 77.4 g of Oxygen.

**Calculate the percent composition of each of the following compounds:**

4. $C_2H_6$

5. $NaHSO_4$

6. $Ca(C_2H_3O_2)_2$

7. HCN

8. $H_2O$

**Calculate the mass of the element in the given mass of compound:**

9. Mass of Hydrogen in 350 g $C_2H_6$

10. Mass of Oxygen in 20.2 g of $NaHSO_4$

11. Mass of Hydrogen in 124 g of $Ca(C_2H_3O_2)_2$

12. Mass of Nitrogen in 378 g HCN

13. Mass of Oxygen in 100 g $H_2O$

# Empirical and Molecular Formula Worksheet

*Show ALL your work for credit!*

1. Identify the following as molecular formulas, empirical formulas or both.
   a. Ribose, $C_5H_{10}O_5$, a sugar molecule in RNA. _____
   b. Ethyl butanoate, $C_6H_{12}O_2$, a cmpd w/ the odor of pineapple. _____
   c. Chlorophyll, $C_{55}H_{72}MgN_4O_5$, part of photosynthesis. _____
   d. DEET, $C_{12}H_{17}ON$, an insect repellent. _____
   e. Oxalic acid $H_2C_2O_4$, found in spinach and tea. _____

2. Calculate the empirical formula of each compound with the following percent composition.
   a. 94.1% O, 5.9% H _____
   b. 79.9% C, 20.1% H _____

3. The compound meythl butanoate smells like apples. Its percent composition is 58.8% C, 9.8% H, and 31.4% O. If its gram molecular mass is 102 g/mole, what is its molecular formula?

4. A typical virus particle is $5 \times 10^{-6}$ cm in diameter. If Avogadro's number of these virus particles were laid in a row, how many kilometers long would the line be?

5. a. A compound of carbon and hydrogen has the composition of 92.25% carbon and 7.75% hydrogen by mass. What is the empirical formula of this composition?

   b. If the compound has a mass of 52.03 g/mole, what is the molecular formula of the compound?