## Determining Empirical Formulas

What is the empirical formula (lowest whole number ratio) of the compounds below?

1. 75% carbon, 25% hydrogen

_____

2. 52.7% potassium, 47.3% chlorine

_____

3. 22.1% aluminum, 25.4% phosphorus, 52.5% oxygen

_____

4. 13% magnesium, 87% bromine

_____

5. 32.4% sodium, 22.5% sulfur, 45.1% oxygen

_____

6. 25.3% copper, 12.9% sulfur, 25.7% oxygen, 36.1% water

_____

 

## Percentage Composition

Determine the percentage composition of each of the compounds below.

1. $KMnO_4$
   - K = _____
   - Mn = _____
   - O = _____

2. HCl
   - H = _____
   - Cl = _____

3. $Mg(NO_3)_2$
   - Mg = _____
   - N = _____
   - O = _____

4. $(NH_4)_3PO_4$
   - N = _____
   - H = _____
   - P = _____
   - O = _____

5. $Al_2(SO_4)_3$
   - Al = _____
   - S = _____
   - O = _____

Solve the following problems.

6. How many grams of oxygen can be produced from the decomposition of 100. g of $KClO_3$? _____

7. How much iron can be recovered from 25.0 g of $Fe_2O_3$?

   _____

8. How much silver can be produced from 125 g of $Ag_2S$?

   _____

 

## Determining Molecular Formulas (True Formulas)

Solve the problems below.

1. The empirical formula of a compound is $NO_2$. Its molecular mass is 92 g/mol. What is its molecular formula?

   _____

2. The empirical formula of a compound is $CH_2$. Its molecular mass is 70 g/mol. What is its molecular formula?

   _____

3. A compound is found to be 40.0% carbon, 6.7% hydrogen and 53.5% oxygen. Its molecular mass is 60. g/mol. What is its molecular formula?

   _____

4. A compound is 64.9% carbon, 13.5% hydrogen and 21.6% oxygen. Its molecular mass is 74 g/mol. What is its molecular formula?

   _____

5. A compound is 54.5% carbon, 9.1% hydrogen and 36.4% oxygen. Its molecular mass is 88 g/mol. What is its molecular formula?

   _____