Name_____

Percent Composition and Formulas Worksheet

1. Complete the following problems using the factor label method. SHOW ALL WORK!

   a. ? moles $Zn(OH)_2$ = 34.5 grams $Zn(OH)_2$

      .347 mol

   b. ? grams C_4H_{10} = $4.5x10^{23}$ molecules C_4H_{10}

      43 g

   c. ? grams $MgCl_2$ = 6.23 moles $MgCl_2$

      594 g

2. Determine the percent composition of the following compounds. SHOW WORK!

   a. NO

      46.7% N; 53.3% O

   b. N_2O_4

      30.4% N; 69.6% O

   c. $C_2H_5NH_3$

      52.2% C; 17.4% H; 30.4% N

3. Complete the following problems to determine formulas. SHOW WORK!

   a. Determine the *empirical* formula for a compound of 87.42% N and 12.58% H.

      NH_2

b. Determine the *empirical* formula for a compound of 14.6% C; 39.0% O; 46.3% F.

CO_2F_2

c. Determine the *molecular* formula for a compound with the empirical formula CHO and a molar mass of 116.1 g/mol.

$C_4H_4O_4$

d. Determine the *molecular* formula for a compound with the empirical formula $NPCl_2$ and a molar mass of 347.66 g/mol.

$N_3P_3Cl_6$

e. Determine the *molecular* formula for a compound of 24.78% C, 2.08% H, and 73.14% Cl, and a molar mass of 290.85 g/mol.

$C_6H_6Cl_6$

f. Determine the *molecular* formula for a compound of 74.03% C, 8.70%H, 17.27%N, and a molar mass of 162 g/mol.

$C_{10}H_{14}N_2$