



Show all of your work or get a **zero!** Use the correct number of significant figures and scientific notation. Use dimensional analysis and label all units, including the answer.

Part I: Mole Relationships

1. Find the molar mass of F_2 . _____

a. Find the mass of 2.3 mol of F_2 .

b. Find the mass in grams of 2.00×10^{23} molecules of F_2 .

c. Find the mass in grams of 29.1 L of F_2 .

2. A chemist has 8.67 moles of Copper (II) phosphate:

a. What is the formula of copper (II) phosphate? _____

b. Given 8.67 moles copper (II) phosphate, how many phosphorus atoms does she have?

3. What is the density of carbon trioxide gas at STP?

Part II: Percent Composition

1. What is the percent composition of lead (II) nitrate?

Formula of Lead (II) nitrate = _____

%Pb = _____

%N = _____

%O = _____

Part III: HONOR CHEMISTRY ONLY - Empirical and Molecular Formulas

1. A compound contains 47.08 % carbon, 6.59 % hydrogen and 46.33 % chlorine.

a. What is the compound's empirical formula?

b. If the molar mass of the compound is 153 g/mol. What is the molecular formula?

Part IV: Mole Lab

Show work for last 3 columns below. Molar mass must have one number past the decimal. All answer must show proper significant figures and scientific notation.

Name	Formula	Molar mass	Mass in 1 tsp.	Moles of calcium hydroxide (a)	Formula Units of Calcium hydroxide (b)	Atoms of each element (c)
Calcium hydroxide			2.31 g			Ca = O = H =

a. Work for moles of calcium hydroxide calculation:

b. Work for formula units of calcium hydroxide:

c. Work for atoms of each element:

Ca =

O =

H =

"AN ACE IN THE MOLE"

