Name _____ Period _____

Chemistry Review
Basic Roadmaps

Part I: Calculate the molar mass (correct to two places after the decimal) of each of the following compounds:

1) KBr   _____ g/mole   2) Al_2O_3 _____ g/mole

3) $Mg(NO_3)_2$ _____ g/mole   4) K_3PO_4 _____ g/mole

Part II: Solve each of the following mole problems. You must show work in order to get credit. Use all the rules for significant figures and include units in your answers.

1) How many moles of lead (Pb) are there in 15.7 g of lead?

1. _____

2) How many moles of $MgCl_2$ are there in 175.0 g of $MgCl_2$?

2. _____

3) How many grams of zinc (Zn) are there in 0.999 moles of zinc?

3. _____

4) How many grams of NH_3 are in 250.0 moles of NH_3?

4. _____

5) How many molecules of HF are there in 72.00 g of HF?

5. _____

6) How many grams of water are in 1.500×10^{25} molecules of water?

6. _____

Part III: Solve the following formula problems.

1) The chemical that gives Soda Pop its characteristic taste is a derivative of dextrose. Dextrose is 40.00 % carbon, 6.71% hydrogen, and 53.29 % oxygen. If the molar mass of dextrose is 180 grams/mole what are the empirical and molecular formulas of dextrose?

Empirical _____

Molecular _____

2. The chemical that gives Vinegar its characteristic taste is acetic acid. Acetic acid is 40.00 % carbon, 6.71% hydrogen, and 53.29 % oxygen. If the molar mass of acetic acid is 60.05 grams/mole what are the empirical and molecular formulas of acetic acid?

Empirical _____

Molecular _____

Part IV: Solve the following molarity problems.

1) What is the Molarity of 5.00 moles of HCl in 2.50 L?

2) How many grams of NaCl are needed to make 2.00 L of 2.50 M NaCl?

3) What volume of 1.250 M HF contains 3.500 moles of HF?