

Topics:

- atomic mass, calculating average atomic mass from % abundances of isotopes, mass spectrometers
- molar mass, moles, conversions between grams, moles and # of particles
- percent composition of compounds (finding % composition of each element when given a chemical formula and finding total mass of an element in a sample when given chemical formula)
- Determine the empirical formula of a compound. The following types of questions are possible:
- Find empirical formula when given % composition of each element in compound.
- Find empirical formula when given experimental data obtained by reacting compound (often by combustion of compound)
- Find empirical formula of a hydrate when given experimental data concerning the heating of hydrate
- Find Molecular Formula (once you know empirical formula, use molar mass to find molecular formula.)
- Write chemical equations when given chemical names of reactants and products. Understand the following labels: (g), (l), (s), (aq)
- Balance chemical equations.
- Stoichiometry
 - a) Determine the limiting reactant (if necessary)
 - b) Convert from amounts of one substance in a reaction to amounts of another substance in the reaction. This usually requires the conversion from *grams A* → *moles A* → *moles B* → *grams B*, but problems could also require calculation of the volume of a substance when given density. (*If one has found the amount of a product, this is called the theoretical yield.*)
 - c) Determine percent yield of a product when given the actual (experimental) yield.

*****You will be given a polyatomic ion chart. However, you will need to know the following molecular formulas, H_2O , NH_3 (ammonia), CH_4 (methane) and the following diatomic elements: H_2 , N_2 , O_2 , F_2 , Cl_2 , Br_2 , I_2 (HOFBrINCl's)***

Review HW for Chapter3: Everything is required except for Study Guide questions.

- **Multiple Choice Review WKS**
- **Review WKS--from text book & Additional Questions**
- **In Study Guide (optional):** Chap 3--Exercises and Problems (p.50) – all are good, but particularly #2, 4, 9, 10b, 11, 12b, 13, 15, 16, 18, 20, 23, 24, 26, 28, 31 (Note: 10b & 12b answers are incorrect; corrections will be posted on my website)