**AP Chemistry Unit 1: Introduction & Stoichiometry Test Review**

1. Review all material in your summer assignment packet.
2. Know the scientists and their contributions to chemistry from the scientists assignment. You will have to write about them--not all of them but several. You do NOT need to know dates.
3. Solve Problems like the following

1) Aspirin (C9H8O4) is produced by the reaction of salicylic acid (C7H6O3) and acetic anhydride (C4H6O3).

C7H6O3(s) + C4H6O3(l) --> C9H8O4(s) + CH3CO2H(aq)

If you mix 100. g of each of the reactants, what is the maximum mass of aspirin that can be obtained?

2) Diborane, B2H6, is a valuable compound in the synthesis of new organic compounds. One of several ways this born compound can be made is by the reaction

2 NaBH4(s) + I2(s) --> B2H6(g) + 2 NaI(s) + H2(g)

Suppose you use 1.203 g of NaBH4 with an excess of iodine and obtain 0.295 g of B2H6. What is the percent yield of B2H6?

3) 25. If copper metal is a mixture two isotopes, Cu-63, mass = 62.9298 u and Cu-65, mass = 64.9278 u. The molar mass of copper is 64.546 g/mole. Calculate the % abundances of the two isotopes of copper. Show your work.

4) Menthol, from the *oil of mint*, has a characteristic cool taste. The compound contains only C, H, and O. If 95.6 mg of menthol burns completely in O2, and gives 269 mg of CO2 and 110 mg of H2O, what is the empirical formula of menthol?