OBJWS Chemical Quantities
THE MOLE

1. TERM: representative particle
   What is another name for formula unit?
   What is the representative particle for sodium fluoride?
   What is the representative particle for carbon monoxide?

2. TERM: mole
   How many atoms are in 1.2 mol of calcium?
   How many molecules are in 0.56 mol of CO_2?

3. TERM: molecular mass (gmm)
         Formula mass (gfm)
   Find the molecular mass of: OF_2 and S_2F_2
   Find the gfm of $CaCl_2$, $KMnO_4$, and CuO

4. How much is a gross? (usually)
5. Who was Amadeo Avogadro? (include his part BEFORE the mole)

6. Find the mass in g of each quantity.
   A. 3.0 mol K
   B. 2.20 x 10^{-2} mol $BaCl_2$
7. Find the number of mol of each quantity.
   A. 34.0 g Fe
   B. 0.0890 g NaOH

8. TERM: STP   and   molar volume
   What is the volume at STP of these gases?
   A. 4.49 mol of neon
   B. 3.0 mol of argon

9. What are the densities of these gases at STP? (HINT: D= m/V --- use gmm/22.4 L)
   A. CO   B. Kr

10. What is a multistep mole problem?
    A. What is the mass of 1 atom of Cr?
    B. If you have 35.9 g of MnF_2, how many molecules is this?
    C. How many mol of gas is 0.345 L of SO_2?
    D. How many molecules are in 3.00 L of H_2?

11. TERM: percent composition
    Calculate the % composition of the following:
    A. $Ca(HCO_3)_2$
    B. HNO_3
    C. Sb_2O_3
12. TERM: empirical formula
    For each percent composition, solve for the empirical formula:
    A. 63.5% Ag, 8.245%, 28.255% O
    B. 81.8% C, 18.2 %H
    C. 17.6 % Na, 39.7% Cr, 42.7 % O

13. TERM: molecular formula
    Determine the molecular formula for a sample that is 55.00 g and the empirical formula is CH_3N.