(#7-2)
Chemistry
Stoichiometry
Moles, Limiting, and excess #2

- For each of the following problems complete:
  - Complete and balance if needed.
  - Determine Limiting and excess reactant.
  - Determine the amount of excess
  - Determine the amount of product produced for each reaction. Convert at least one of the products to number of actual particles.

1. $2C_2H_6 + 7O_2 \rightarrow 4CO_2 + 6H_2O$
   3.050 moles 7.00 moles

I.	3.05	7.00		
S.	2	−7	+4.0	+6.0
E.	+1.05	0		

$6.0 \times \frac{6.022E23}{1mol} = 3.6\ E24$

$7. \frac{O_2}{7\ O_2} \cdot \frac{2\ C_2H_6}{} = 2.$

$7. \frac{4}{7} = 4.0mol$

$7. \frac{6}{7} = 6.0mol$

2. $CuCl_2 + 2NaOH \rightarrow Cu(OH)_2 + 2NaCl$
   2.22 moles 3.970 moles

I.	2.22	3.97		
S.	−1.985	−3.97	+1.985	+3.97
E.	.235	0		

$2.22mol \cdot \frac{2}{1} = 4.44mol$

$3.970mol \cdot \frac{1}{2} = 1.985mol$ $CuCl_2$ needed

$3.97mol \cdot \frac{6.022E23}{1} = 2.39E24$ NaCl

3. $2H_2 + O_2 \rightarrow 2H_2O$
   5.00 moles 11 moles

I.	5.0	11		0
S.	−5.0	−2.5	+	5.0
E.	0	+8.5		↑

$5.0 \cdot \frac{1}{2} = 2.5mol$ O_2

$5.0 \times \frac{6.022E23}{1} = 3.011E24$

4. $2H_2O_2 \rightarrow 2H_2O + O_2$.
   2.5mol

I.	2.5	0	0
S.	−2.5	+5.0	+2.5
E.	0		

$2.5 \cdot \frac{2}{1} = 5.0$

$2.5 \cdot \frac{6.022E23}{1mol} = 1.5E24$