Key

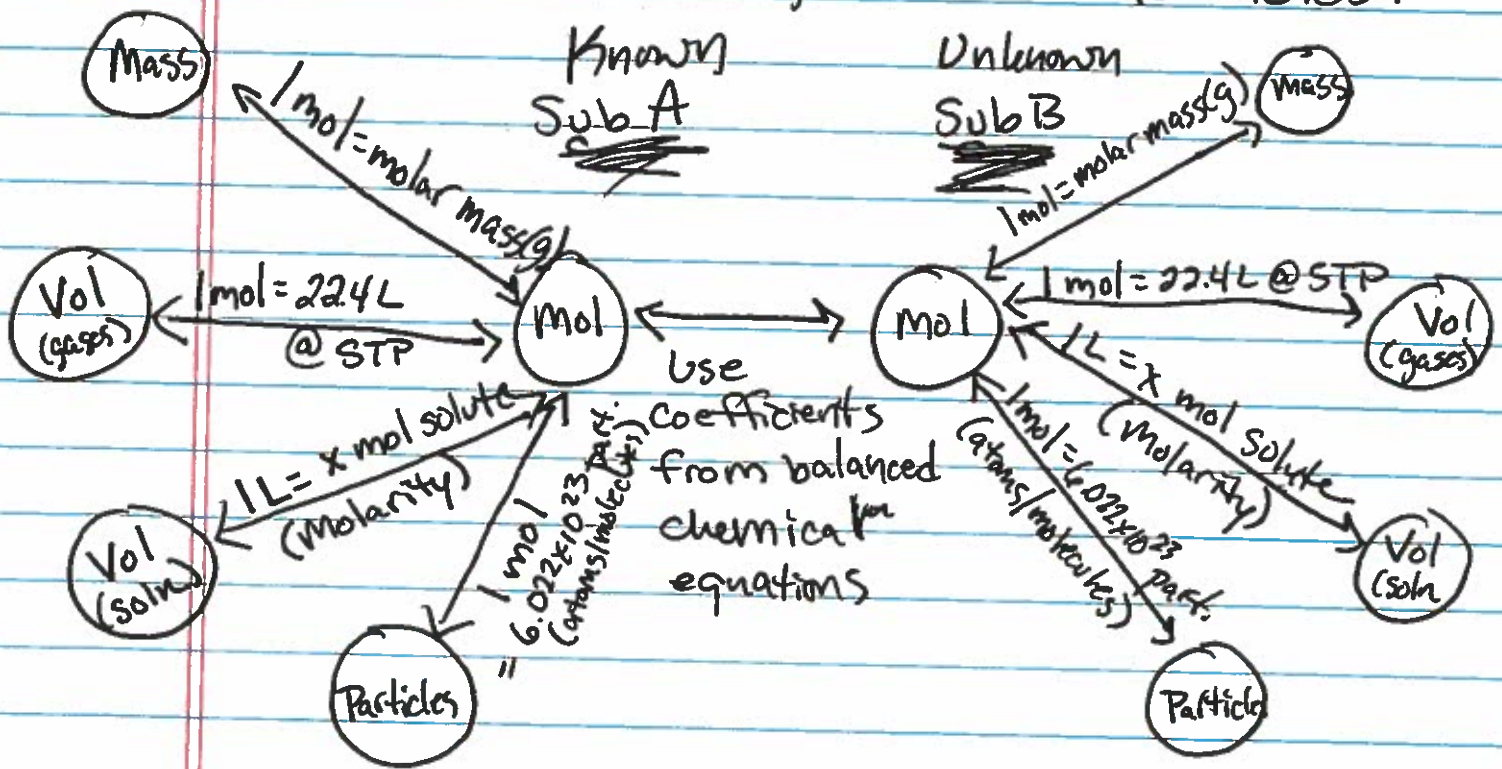
Intro to Stoich Notes

- **Stoichiometry** - the relationship b/w the relative quantities of substances taking part in a reaction or forming a compound
  - **Composition stoich.** - the mass relationships of elements in compds
  - **reaction stoich.** - the mass relationships b/w reactants & products in a chem. rxn

- Stoichiometry allows us to convert between different amts of diff substances in a chemical rxn

★#1 Rule of Stoichiometry★

- When in doubt, convert to moles!



Intro Notes cont.

- Conversion examples:

Mass

$$\frac{\text{Mass g}^{\text{sub A}}}{1} \times \frac{1\text{ mol}^{\text{sub A}}}{\text{Molar Mass(g)}_{\text{sub A}}} \times \frac{\#\text{ mol}^{\text{sub B}}}{\#\text{ mol}^{\text{sub A}}} \times \frac{\text{molar mass g}^{\text{sub B}}}{1\text{ mol}^{\text{sub B}}} = \boxed{\#\text{ g}^{\text{sub B}}}$$

Volume (gases) @ STP

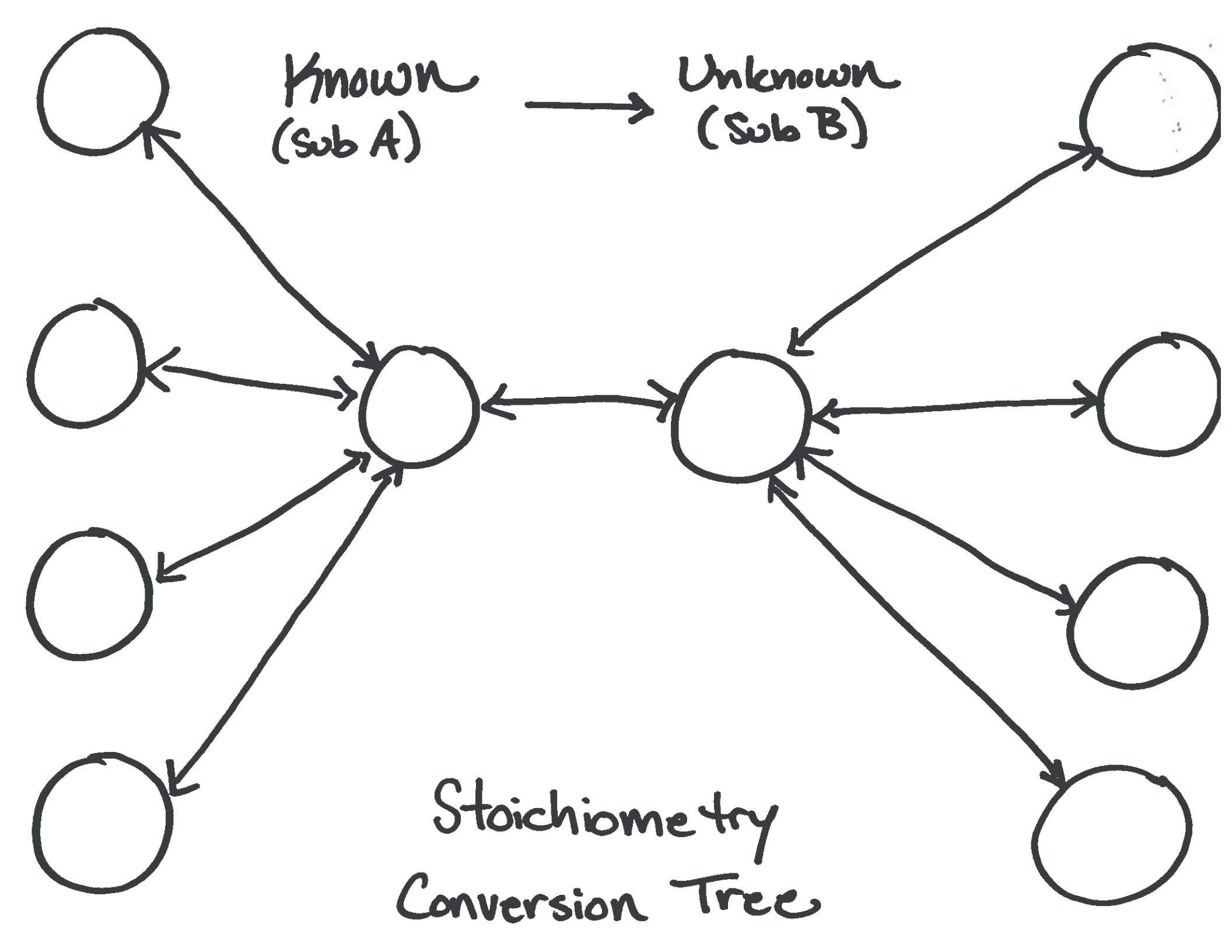
$$\frac{\text{Vol L}^{\text{sub A}}}{1} \times \frac{1\text{ mol}^{\text{sub A}}}{22.4\text{ L}^{\text{sub A}}} \times \frac{\#\text{ mol}^{\text{sub B}}}{\#\text{ mol}^{\text{sub A}}} \times \frac{22.4\text{ L}^{\text{sub B}}}{1\text{ mol}^{\text{sub B}}} = \boxed{\#\text{ L sub B}}$$

Volume (soln) Not @ STP

$$\frac{\text{Vol L}^{\text{sub A}}}{1} \times \frac{\#\text{mol solute A}}{1\text{ L}^{\text{sub A}}} \times \frac{\#\text{mol}^{\text{sub B}}}{\#\text{ mol}^{\text{sol A}}} \times \frac{1\text{ L}^{\text{sub B}}}{\#\text{ mol}^{\text{solute B}}} = \boxed{\#\text{ L sub B}}$$

Particles

$$\frac{\text{Particles}^{\text{sub A}}}{1} \times \frac{1\text{ mol}^{\text{sub A}}}{6.022\times10^{23}\text{ part.}^{\text{sub A}}} \times \frac{\#\text{ mol}^{\text{sub B}}}{\#\text{ mol}^{\text{sub A}}} \times \frac{6.022\times10^{23}\text{ part}^{\text{sub B}}}{\#\text{ mol}^{\text{sub B}}} = \boxed{\#\text{ part}^{\text{sub B}}}$$


Known
(Sub A)
Unknown
(Sub B)
Stoichiometry
Conversion Tree

Stoichiometry Conversions

Mass

_____ X _____ X _____ X _____ =

Volume (gases @ STP)

_____ X _____ X _____ X _____ =

Volume (solutions / Molarity)

_____ X _____ X _____ X _____ =

Particles (atoms / molecules / F.U.)

_____ X _____ X _____ X _____ =