## Notes - Stoichiometry

- Stoichiometry is the math used to relate the amount of reactants in a chemical reaction to the amounts of products produced by the reaction.
- To see this relationship, one must have a balanced chemical reaction.

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\text { Ex. - } 2 \mathrm{H}_{2}+1 \mathrm{O}_{2} \rightarrow 2 \mathrm{H}_{2} \mathrm{O}
$$

- This balanced equation forms the foundation of the relationship. The reaction above shows that 2 hydrogen gas molecules are needed to react with 1 oxygen gas molecule for the reaction to proceed properly.
- The above reaction is still balanced if . . . .
- The key is the relationship is

Ex. - Consider $\mathrm{N}_{2}+\mathrm{H}_{2} \quad \rightarrow \quad \mathrm{NH}_{3}$
a.) How many molecules of $\mathrm{N}_{2}$ are required to react with 15 molecules of $\mathrm{H}_{2}$ ?
b.) How many moles of $\mathrm{NH}_{3}$ are produced when 18 moles of $\mathrm{H}_{2}$ are reacted?

