Notes - Stoichiometry

| - <u>Stoichiome</u> | <u>try</u> is the matl | h used to relate | the amount | of reactants | in a chemical | reaction to | the amounts |
|---------------------|------------------------|------------------|------------|--------------|---------------|-------------|-------------|
| of produc | ts produced by | the reaction. | | | | | |

| - 7 | To see | this | relationship, | one must | have a bo | alanced | chemical | reaction. |
|-----|--------|------|---------------|----------|-----------|---------|----------|-----------|
|-----|--------|------|---------------|----------|-----------|---------|----------|-----------|

$$Ex.$$
 - 2 H_2 + 1 O_2 \rightarrow 2 H_2O

- 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 \dots

- The key is the relationship is

Ex. - Consider
$$N_2 + H_2 \rightarrow NH_3$$

a.) How many molecules of N_2 are required to react with 15 molecules of H_2 ?

b.) How many moles of NH_3 are produced when $18\ moles$ of H_2 are reacted?