WKS 3-5 – Limiting & Excess Reagents; Reaction Yields **Name:**_____

3.79 Define limiting reagent and excess reagent.

What is the significance of the limiting reagent in predicting the amount of the product obtained in a reaction?

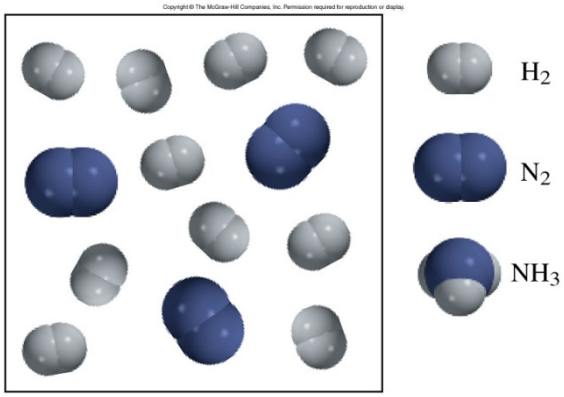
Can there be a limiting reagent if only one reactant is present?

3.82 $N_2 + 3H_2 \rightarrow 2NH_3$ **From diagram, one sees that there are 3 moles of N_2 and 10 moles of H_2**

Fill in the "ICF" table to help answer all questions:

	N_2	+	$3\ H_2$	→	$2\ NH_3$
Initial	**3 mc**		**10 mc**		**0 mc**
Change					
Final					

What is the limiting reagent? Explain.



Number of moles of product produced:

Number of moles of excess reagent left:

3.83 Nitric oxide reacts with oxygen gas to form nitrogen dioxide, a dark-brown gas:

$$2\ NO(g) + O_2(g) \rightarrow 2\ NO_2(g)$$

In one experiment 0.886 mole of NO is mixed with 0.503 mole of O_2. Calculate which of the two reactants is the limiting reagent. Calculate also the number of moles of NO_2 produced.

3.88 Why is the actual yield of a reaction almost always smaller than the theoretical yield?