Chapter 9 Problem II

- 23. $C_2H_4(g) + 3 O_2(g) \rightarrow 2 CO_2(g) + 2 H_2O(g)$ If 2.70 mol C_2H_4 is reacted with 6.30 mol O_2 :
 - a) Identify the limiting reagent.
 - b) Calculate the moles of water produced.
- 24. $C_2H_4(g) + 2O_2(g) \rightarrow 2CO(g) + 2H_2O(g)$
 - If 2.70 mol C_2H_4 is reacted with 6.30 mol O_2 :
 - c) Identify the limiting reagent.
 - d) Calculate the moles of water produced.
- 26. 2 C₂H₂ + 5 O₂ → 4 CO₂ + 2 H₂O
 How many grams of water can be produced by the reaction of 2.40 mol C₂H₂ with 7.4 mol O₂?
- 27. When 84.8 g of iron (III) oxide reacts with an excess of carbon monoxide, 54.3 g of iron is produced. Fe₂O₃ + 3CO → 2 Fe + 3CO₂
 What is the percent yield of this reaction.
- What is the percent yield if 4.65 g of copper is produced when 1.87 g of aluminum reacts with an excess of copper (II) sulfate?
 2AI + 3CuSO₄ → Al₂(SO₄)₃ + 3 Cu
- 31. What is the difference between an actual yield and a theoretical yield?

Which yield is larger for a given reaction?

How are these values used to determine percent yield?