**Practice Problems**

Here's the equation to use for all three problems:

2 H2 + O2 ---> 2 H2O

1) How many moles of H2O are produced when 5.00 moles of oxygen are used?

2) If 3.00 moles of H2O are produced, how many moles of oxygen must be consumed?

3) How many moles of hydrogen gas must be used, given the data in problem two?

This question just slipped in here somehow. If you can't answer it right now, that's OK. Go to the solution and read it carefully.

4) Suppose 4.00 grams of H2 were used? How many grams of water would be produced? Here are two links intended to give you a hint as to how to solve this problem:

**Answers**

1) How many moles of H2O are produced when 5.00 moles of oxygen are used?

Here are the two substances in the molar ratio I used: http://chemteam.info/Stoichiometry/Molar-Ratio-O2-H2O.GIF

The molar ratio from the problem data is: http://chemteam.info/Stoichiometry/Molar-Ratio-5.00-x.GIF

The proportion to use is: http://chemteam.info/Stoichiometry/Molar-Ratio-Ans1-Proportion.GIF

2) If 3.00 moles of H2O are produced, how many moles of oxygen must be consumed?

Here are the two substances in the molar ratio I used: http://chemteam.info/Stoichiometry/Molar-Ratio-O2-H2O.GIF

The molar ratio from the problem data is: http://chemteam.info/Stoichiometry/Molar-Ratio-3.00-x.GIF

The proportion to use is: http://chemteam.info/Stoichiometry/Molar-Ratio-Ans2-Proportion.GIF

3) How many moles of hydrogen gas must be used, given the data in problem two? There are two ways to solve this problem:

a) Here are the two substances in the molar ratio I used: http://chemteam.info/Stoichiometry/Molar-Ratio-H2-O2.GIF

The molar ratio from the problem data is: http://chemteam.info/Stoichiometry/Molar-Ratio-1.50-x.GIF

The proportion to use is: http://chemteam.info/Stoichiometry/Molar-Ratio-Ans3-Proportion.GIF

Notice that the above solution used the **answer** from problem two. The solution below uses the information given in the original problem:

b) The H2 / H2O ratio of 2/2 could have been used also. In that case, the ratio from the problem would have been 3.00 over x, since you were now using the water data and not the oxygen data.

4) Suppose 4.00 grams of H2 were used? How may grams of water would be produced?

4.00 grams of H2 is 2.00 moles. The H2 / H2O ratio is 2/2, so 2.00 mole of H2O are produced. That's 36.0 grams and that's the answer.

Congragulations if you got it right. However, don't stop there. Do enough problems to the point you believe you have the technique nailed and then continue to do more problems.