

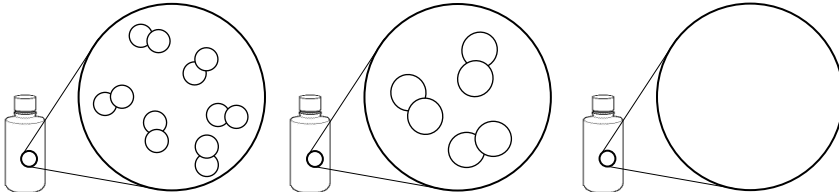
Name: _____

Hour: _____ Date: _____

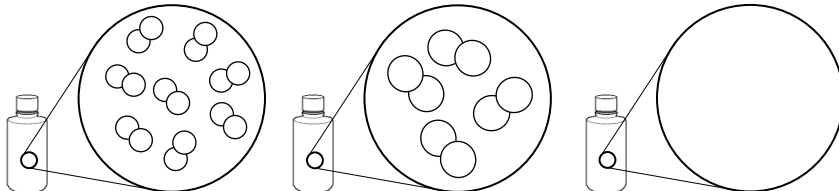
Chemistry: Visualizing the Limiting Reactant

Use the balanced chemical equation $2 \text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2 \text{H}_2\text{O}(\text{g})$ for all the problems on this sheet.

Directions: Assuming that each molecule shown in the first two containers represents one mole of that substance, write the correct number of moles of substance s below the containers. Then, assume that the contents of the first two containers are combined in the third container. In the third container, draw the correct number of moles of water produced.

1. 

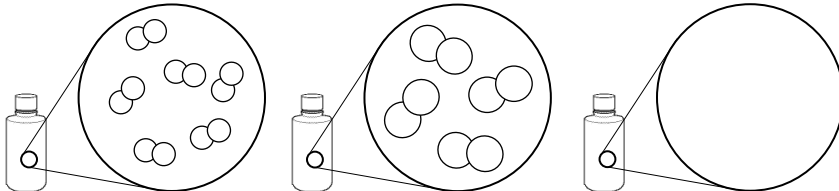
_____ mol $\text{H}_2(\text{g})$ _____ mol $\text{O}_2(\text{g})$ _____ mol $\text{H}_2\text{O}(\text{g})$

2. 

_____ mol $\text{H}_2(\text{g})$ _____ mol $\text{O}_2(\text{g})$ _____ mol $\text{H}_2\text{O}(\text{g})$

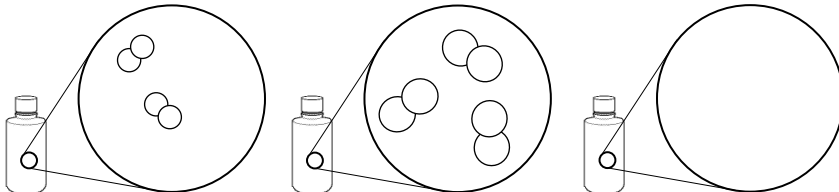
In the questions above, all the H_2 and O_2 reacted. In most reactions, though, the reactants DO NOT combine perfectly; one reactant will be used up before the other; there is too much of one and not enough of the other. The reactant used up first is called the **limiting reactant**, the other(s) is/are called the **excess reactant(s)**.

Directions cont: For each question below, write the number of moles of substances beneath the corresponding containers. In the third container, draw in the correct number of moles of water produced **and** any unreacted, excess reactant that is left over. To the right of each question, write the limiting and excess reactant.

3. 

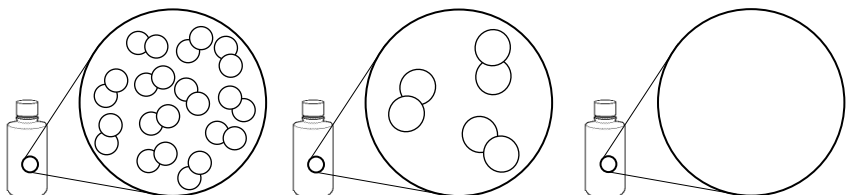
_____ mol $\text{H}_2(\text{g})$ _____ mol $\text{O}_2(\text{g})$ _____ mol $\text{H}_2\text{O}(\text{g})$ + _____ mol _____ left over

limiting reactant = _____
excess reactant = _____

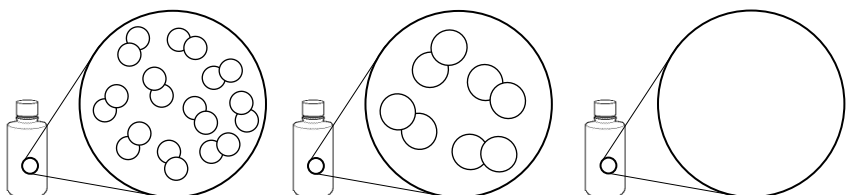
4. 

_____ mol $\text{H}_2(\text{g})$ _____ mol $\text{O}_2(\text{g})$ _____ mol $\text{H}_2\text{O}(\text{g})$ + _____ mol _____ left over

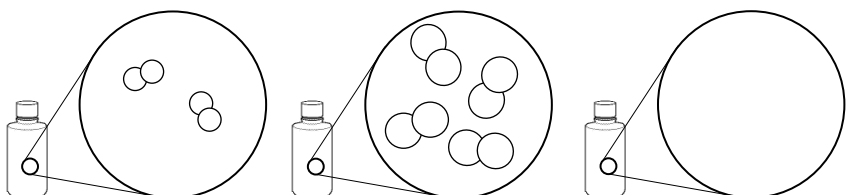
limiting reactant = _____
excess reactant = _____

5.  limiting reactant = _____
excess reactant = _____

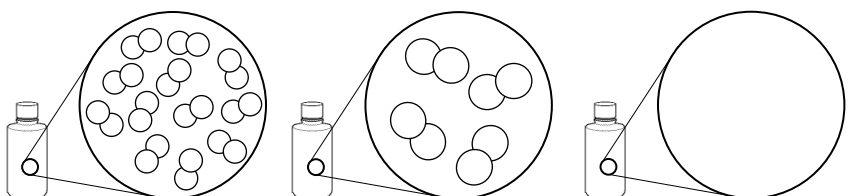
_____ mol $\text{H}_2(\text{g})$ _____ mol $\text{O}_2(\text{g})$ _____ mol $\text{H}_2\text{O}(\text{g})$ + _____ mol _____ left over

6.  limiting reactant = _____
excess reactant = _____

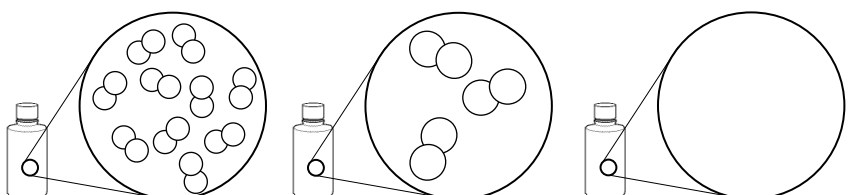
_____ mol $\text{H}_2(\text{g})$ _____ mol $\text{O}_2(\text{g})$ _____ mol $\text{H}_2\text{O}(\text{g})$ + _____ mol _____ left over

7.  limiting reactant = _____
excess reactant = _____

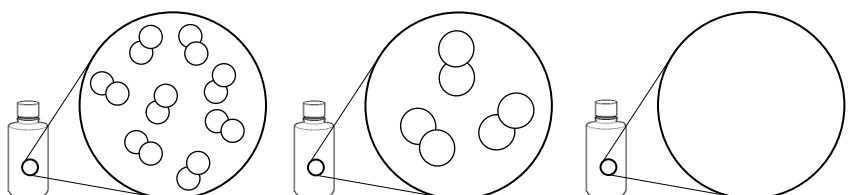
_____ mol $\text{H}_2(\text{g})$ _____ mol $\text{O}_2(\text{g})$ _____ mol $\text{H}_2\text{O}(\text{g})$ + _____ mol _____ left over

8.  limiting reactant = _____
excess reactant = _____

_____ mol $\text{H}_2(\text{g})$ _____ mol $\text{O}_2(\text{g})$ _____ mol $\text{H}_2\text{O}(\text{g})$ + _____ mol _____ left over

9.  limiting reactant = _____
excess reactant = _____

_____ mol $\text{H}_2(\text{g})$ _____ mol $\text{O}_2(\text{g})$ _____ mol $\text{H}_2\text{O}(\text{g})$ + _____ mol _____ left over

10.  limiting reactant = _____
excess reactant = _____

_____ mol $\text{H}_2(\text{g})$ _____ mol $\text{O}_2(\text{g})$ _____ mol $\text{H}_2\text{O}(\text{g})$ + _____ mol _____ left over