

Read page 207 – 211 and answer the following questions:

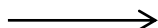
1. From the following balanced equation: $3\text{H}_2 + \text{N}_2 \rightarrow 2\text{NH}_3$
- Name the reactants.
 - Formula and name of the product.
 - How many molecules of H_2 will combine with one molecule of N_2 ?
 - How many molecules of N_2 are required to produce 10 molecules of NH_3 ?
2. Write out the word, skeleton and balanced equation for the combustion of methane:

Word equation:

Skeleton equation:

Balanced equation:

3. Draw a picture of the balanced equation kind of like the picture on page 207.



4. In the balanced equation above, how many of the following are there in the reactants?

- | | | |
|------------------------------|----------|----------|
| a. CH_4 molecules ? | C atoms? | H atoms? |
| b. O_2 molecules ? | O atoms? | |

5. In the balanced equation above, how many of the following are there in the products?

- | | | |
|------------------------------------|----------|----------|
| a. H_2O molecules? | H atoms? | O atoms? |
| b. CO_2 molecules? | C atoms? | O atoms? |

6. In the hints for writing word equations, three points to remember are:

- We use _____ for nearly all elements when not in a compound. eg copper = _____
- The name and formula of three common compounds that contain hydrogen that you should memorize are :
- The seven diatomic non – metal elements that rarely occur as a single atom are:

7. What are two ways to remember the diatomic elements?

8. In the following examples, write out the steps with a brief description of what happened in the step:

Example 1: iron + bromine produces iron (III) bromide

Example 2: tin (IV) nitrite plus potassium phosphate produces potassium nitrite and tin (IV) phosphate

Example 3: ethane (C₂H₆) plus oxygen forms carbon dioxide and water

Practice Problems

Question & Working Area	Final Answer
1. $\text{NaI} + \text{AlCl}_3 \rightarrow \text{NaCl} + \text{AlI}_3$	$\underline{\hspace{1cm}} \text{NaI} + \underline{\hspace{1cm}} \text{AlCl}_3 \rightarrow \underline{\hspace{1cm}} \text{NaCl} + \underline{\hspace{1cm}} \text{AlI}_3$
2. $\text{PbO} \rightarrow \text{Pb} + \text{O}_2$	$\underline{\hspace{1cm}} \text{PbO} \rightarrow \underline{\hspace{1cm}} \text{Pb} + \underline{\hspace{1cm}} \text{O}_2$
3. $\text{Mg}(\text{ClO}_4)_2 + \text{Na} \rightarrow \text{NaClO}_4 + \text{Mg}$	$\underline{\hspace{1cm}} \text{Mg}(\text{ClO}_4)_2 + \underline{\hspace{1cm}} \text{Na} \rightarrow \underline{\hspace{1cm}} \text{NaClO}_4 + \underline{\hspace{1cm}} \text{Mg}$
4. Propane (C ₃ H ₈) plus oxygen forms carbon dioxide and water	
5. Calcium nitrate + potassium carbonate → potassium nitrate + calcium carbonate	