

U5LM1 WS Balancing Reactions

Name: _____

Part I - Balance the following chemical equations.

1. $\text{___ CH}_4(\text{g}) + \text{___ O}_2(\text{g}) \rightarrow \text{___ CO}_2(\text{g}) + \text{___ H}_2\text{O}(\text{g})$
2. $\text{___ Fe}(\text{s}) + \text{___ O}_2(\text{g}) \rightarrow \text{___ Fe}_2\text{O}_3(\text{s})$
3. $\text{___ Na}(\text{s}) + \text{___ H}_2\text{O}(\text{l}) \rightarrow \text{___ NaOH}(\text{aq}) + \text{___ H}_2(\text{g})$
4. $\text{___ C}_4\text{H}_{10}(\text{g}) + \text{___ O}_2(\text{g}) \rightarrow \text{___ CO}_2(\text{g}) + \text{___ H}_2\text{O}(\text{g})$
5. $\text{___ C}_6\text{H}_{12}\text{O}_6(\text{g}) + \text{___ O}_2(\text{g}) \rightarrow \text{___ CO}_2(\text{g}) + \text{___ H}_2\text{O}(\text{g})$
6. $\text{___ B}_2\text{H}_6(\text{g}) + \text{___ H}_2\text{O}(\text{l}) \rightarrow \text{___ H}_3\text{BO}_3(\text{aq}) + \text{___ H}_2(\text{g})$
7. $\text{___ NaOH}(\text{aq}) + \text{___ H}_2\text{SO}_4(\text{aq}) \rightarrow \text{___ H}_2\text{O}(\text{l}) + \text{___ Na}_2\text{SO}_4(\text{aq})$
8. $\text{___ HNO}_3(\text{aq}) + \text{___ Ca}(\text{OH})_2(\text{aq}) \rightarrow \text{___ Ca}(\text{NO}_3)_2 + \text{___ H}_2\text{O}(\text{l})$
9. $\text{___ NH}_4\text{Br}(\text{aq}) + \text{___ Pb}(\text{C}_2\text{H}_3\text{O}_2)_2(\text{aq}) \rightarrow \text{___ NH}_4\text{C}_2\text{H}_3\text{O}_2(\text{aq}) + \text{___ PbBr}_2(\text{s})$
10. $\text{___ Co}_2\text{S}_3(\text{s}) + \text{___ H}_2(\text{g}) \rightarrow \text{___ Co}(\text{s}) + \text{___ H}_2\text{S}(\text{g})$

Part II – Write a balanced chemical equation to describe each of the following.

1. Calcium carbonate decomposes into calcium oxide and carbon dioxide.
2. Sodium reacts with oxygen to give sodium oxide.
3. Magnesium nitride reacts with water to give magnesium hydroxide and ammonia (NH_3).
4. An aqueous phosphoric acid solution reacts with an aqueous calcium hydroxide solution to produce water and solid calcium phosphate.
5. Magnesium dissolves in an aqueous chromium(III) nitrate solution to form chromium and the soluble magnesium nitrate salt.
6. The complete combustion of octane produces carbon dioxide and water.