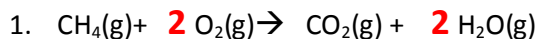
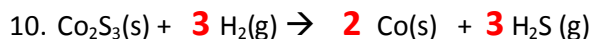
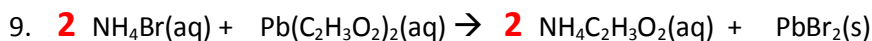
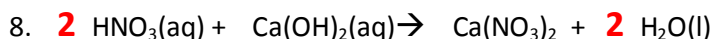
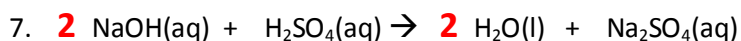
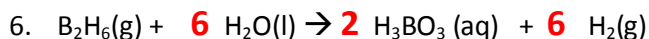
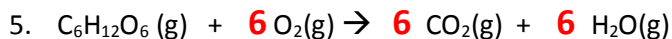
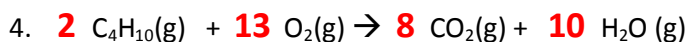
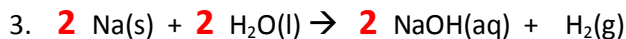
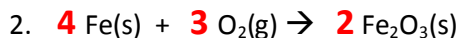


Part I - Balance the following chemical equations.

A balanced equation has equal numbers of each element on both the reactant and product side of the equation. Remember that you can only adjust the *coefficients* in front of each compound to change the quantity of each compound. Changing the *subscripts* changes the identity of a compound and is NOT allowed.

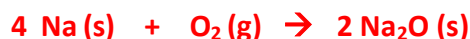
**Part II – Write a balanced chemical equation to describe each of the following.**

This requires that you write chemical formulas from names, apply solubility rules, and mass-balance the equations.

1. Calcium carbonate decomposes into calcium oxide and carbon dioxide.



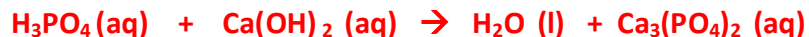
2. Sodium reacts with oxygen to give sodium oxide.



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.

