

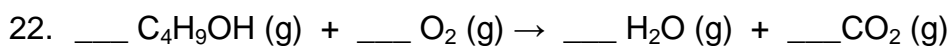
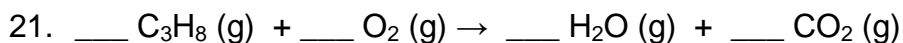
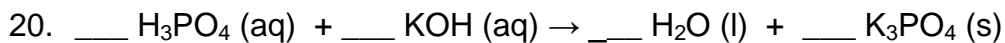
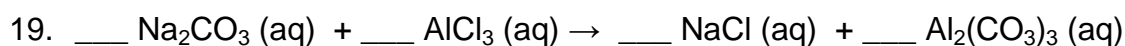
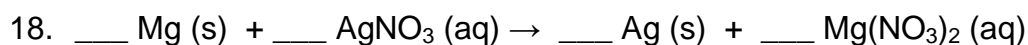
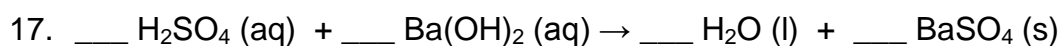
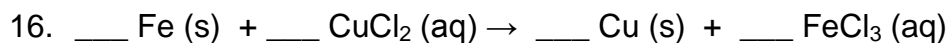
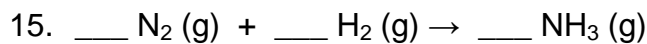
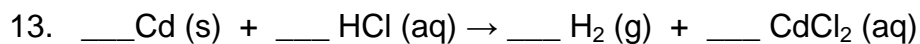
Chapter 8 Blackboard Homework Questions

1. Check all of the following that are evidence of a chemical reaction:
 - a) A solid becomes a liquid when heated.
 - b) Bubbles are produced when a solid is added to a solution.
 - c) A precipitate forms when two solutions are mixed.
 - d) A bright light is given off when a metal is heated.
 - e) A liquid begins to bubble then disappears when heated.
 - f) A solid that is added to a liquid and stirred seems to disappear.
2. Check all of the following statements that are correct:
 - a) In an exothermic reaction, heat is released, so the surroundings feel hotter.
 - b) In an endothermic reaction, heat is absorbed, so the surroundings feel colder.
 - c) The coefficient in a chemical equation is the subscript following an element symbol in a chemical formula.
 - d) These physical states are the same: liquid, (l), and aqueous, (aq).
 - e) The physical state of an ionic compound in water is determined using the Solubility Rules.
 - f) The Activity Series is used to predict products for acid-base neutralization reactions.
 - g) The Active Metals are the only metals that will react with water.
3. Use your Solubility Rules, and check all of the following that are insoluble in water:
 - a) KNO_3
 - b) MgCl_2
 - c) AgBr
 - d) $\text{Cu}(\text{OH})_2$
 - e) KOH
 - f) CaCrO_4
 - g) $\text{Fe}_2(\text{SO}_4)_3$
 - h) $(\text{NH}_4)_2\text{CO}_3$
 - i) $\text{Ni}(\text{NO}_3)_2$
 - j) $\text{Zn}_3(\text{PO}_4)_2$
4. Use your Solubility Rules, and check all of the following that are insoluble in water:
 - a) $\text{Co}_2(\text{SO}_4)_3$
 - b) PbCl_2
 - c) AgNO_3
 - d) $\text{Cu}(\text{C}_2\text{H}_3\text{O}_2)_2$
 - e) $\text{Cd}(\text{OH})_2$
 - f) BaCO_3
 - g) $\text{Fe}_2(\text{CrO}_4)_3$
 - h) NH_4Br
 - i) Li_2CO_3
 - j) NaCl

For problems 5-12, classify each reaction as one of the following:

- a) Combination
 - b) Decomposition
 - c) Single replacement
 - d) Double replacement/Precipitation
 - e) Neutralization
 - f) Combustion
5. $\text{Li}_2\text{CO}_3 (\text{aq}) + \text{CuCl}_2 (\text{aq}) \rightarrow \text{CuCO}_3 (\text{s}) + 2 \text{LiCl} (\text{aq})$
 6. $2 \text{HNO}_3 (\text{aq}) + \text{Ba}(\text{OH})_2 (\text{aq}) \rightarrow 2 \text{H}_2\text{O} (\text{l}) + \text{Ba}(\text{NO}_3)_2 (\text{aq})$
 7. $\text{Zn} (\text{s}) + \text{CuCl}_2 (\text{aq}) \rightarrow \text{Cu} (\text{s}) + \text{ZnCl}_2 (\text{aq})$
 8. $2 \text{Mg} (\text{s}) + \text{Cl}_2 (\text{g}) \rightarrow \text{MgCl}_2 (\text{s})$
 9. $2 \text{Al} (\text{s}) + 6 \text{HCl} (\text{aq}) \rightarrow 3 \text{H}_2 (\text{g}) + 2 \text{AlCl}_3 (\text{aq})$
 10. $(\text{NH}_4)_2\text{CO}_3 (\text{s}) \rightarrow 2 \text{NH}_3 (\text{g}) + \text{H}_2\text{O} (\text{l}) + \text{CO}_2 (\text{g})$
 11. $\text{Ca} (\text{s}) + 2 \text{H}_2\text{O} (\text{l}) \rightarrow \text{H}_2 (\text{g}) + \text{Ca}(\text{OH})_2 (\text{aq})$
 12. $\text{CH}_4 (\text{g}) + 2 \text{O}_2 \rightarrow 2 \text{H}_2\text{O} (\text{g}) + \text{CO}_2 (\text{g})$

Balance each of the following equations for questions 13-22.



For problems 23-30:

i. use the activity series, list of active metals and/or solubility rules to predict the products for each set of the reactants.

ii. If a reaction occurs, balance the equation, or if no reaction occurs, indicate NR for "no reaction".

