Name: _____ Chem 10, Section: _____

Lab Partner: _____ Experiment Date: _____

Single and Double Displacement Reactions

For each of the reactions performed,
-- predict the reaction type (single or double displacement)
-- record your observations
-- predict the names and states of the products formed
-- write the balanced "molecular" equation, including all physical states.

1. Aqueous barium chloride + aqueous sodium sulfate

Reaction Type:	
Observations:	Product Names & States (if none, why not?):
Balanced Equation:	

2. Zinc metal + hydrochloric acid

Reaction Type:	
Observations:	Product Names & States (if none, why not?):
Balanced Equation:	

3. Aqueous sodium phosphate + aqueous copper(II) sulfate

Reaction Type:	
Observations:	Product Names & States (if none, why not?):
Balanced Equation:	

4. Copper metal + aqueous silver nitrate

Reaction Type:	
Observations:	Product Names & States (if none, why not?):
Balanced Equation:	

5. Solid sodium bicarbonate + acetic acid

Reaction Type:	
Observations:	Product Names & States (if none, why not?):
Balanced Equation:	

6. Aqueous nickel(II) nitrate + aqueous sodium hydroxide

Reaction Type:	
Observations:	Product Names & States (if none, why not?):
Balanced Equation:	

7. Copper metal + aqueous zinc nitrate

Reaction Type:	
Observations:	Product Names & States (if none, why not?):
Balanced Equation:	

8. Aqueous potassium chloride + aqueous silver nitrate

Reaction Type:	
Observations:	Product Names & States (if none, why not?):
Balanced Equation:	

9. Hydrochloric acid + aqueous sodium hydroxide

Reaction Type:	
Observations:	Product Names & States (if none, why not?):
Balanced Equation:	

10. Aqueous sodium carbonate + cobalt(II) nitrate

Reaction Type:	
Observations:	Product Names & States (if none, why not?):
Balanced Equation:	

11. Zinc metal + aqueous lead(II) nitrate

Reaction Type:	
Observations:	Product Names & States (if none, why not?):
Balanced Equation:	

12. Aqueous sodium chloride + aqueous potassium nitrate

Reaction Type:	
Observations:	Product Names & States (if none, why not?):
Balanced Equation:	

13. Magnesium metal + acetic acid

Reaction Type:	
Observations:	Product Names & States (if none, why not?):
Balanced Equation:	

14. Aqueous iron(III) chloride + aqueous ammonium hydroxide

Reaction Type:	
Observations:	Product Names & States (if none, why not?):
Balanced Equation:	

Questions

1. Consider Reactions 3 and 14 studied in this lab. Write the **balanced molecular equation** (identical to what you completed in the previous section), the **complete ionic equation** and the **net ionic equation** for these reactions. Include all physical states, and circle the spectator ions in the complete ionic equations.

Reaction 3: *Aqueous sodium phosphate + aqueous copper(II) sulfate*

Balanced Molecular Equation (from page 1):

Complete Ionic Equation:

Net Ionic Equation:

Reaction 14: *Aqueous iron(III) chloride + aqueous ammonium hydroxide*

Balanced Molecular Equation (from page 3):

Complete Ionic Equation:

Net Ionic Equation:

2. Predict the products for the following single and double displacement reactions, and write balanced molecular equations (including physical states) for each of them. If you predict that no reaction will occur, write "NR", followed by a brief explanation.

a. *Aluminum metal + aqueous silver acetate*

b. *Aqueous zinc nitrate + aqueous lithium chloride*

c. *Hydrobromic acid + solid magnesium sulfite*

d. *Aqueous rubidium hydroxide + perchloric acid*

e. *Tin metal + phosphoric acid*

f. *Aqueous lithium chromate + aqueous gold(III) iodide*