

Name: \_\_\_\_\_

## USE FOR DOUBLE REPLACEMENT REACTIONS

Solubility Rules:

### Soluble:

- All Nitrates, Acetates, Ammonium, and Group 1 (IA) salts
- All Chlorides, Bromides, and Iodides, except Silver, Lead, and Mercury(I)
- All Fluorides except Group 2 (IIA), Lead(II), and Iron(III)
- All Sulfates except Calcium, Strontium, Barium, Mercury, Lead(II), and Silver

### Insoluble (0.10 M or greater):

- All Carbonates and Phosphates except Group 1 (IA) and Ammonium
- All Hydroxides except Group 1 (IA), Strontium, Barium, and Ammonium
- All Sulfides except Group 1 (IA), 2 (IIA), and Ammonium
- All Oxides except Group 1 (IA)

*Practice: Aqueous or Solid?*

- |                        |    |   |    |
|------------------------|----|---|----|
| 1. calcium nitrate     | aq | 7. FeF <sub>3</sub>                                 | S  |
| 2. sodium hydroxide    | aq | 8. Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>  | aq |
| 3. calcium carbonate   | S  | 9. BaSO <sub>4</sub>                                | S  |
| 4. lithium sulfide     | aq | 10. (NH <sub>4</sub> ) <sub>2</sub> CO <sub>3</sub> | aq |
| 5. magnesium phosphate | S  | 11. Na <sub>2</sub> O                               | aq |
| 6. silver bromide      | S  | 12. PbF <sub>2</sub>                                | S  |

## USE FOR SINGLE REPLACEMENT REACTIONS

*Practice with the Activity Series:*

- |                                     |     |   |     |
|-------------------------------------|-----|---|-----|
| 1. Can Na react with cold water?    | yes | 7. Can zinc react with water?                     | NO  |
| 2. Can Ca react with steam?         | yes | 8. Can silver react with acids?                   | NO  |
| 3. Can Co replace Br <sub>2</sub> ? | NO  | 9. Can F <sub>2</sub> replace Cl <sub>2</sub> ?   | yes |
| 4. Can Hg replace Sb?               | NO  | 10. Can iron react with steam?                    | yes |
| 5. Can Mg replace Al?               | yes | 11. Can Br <sub>2</sub> replace Cl <sub>2</sub> ? | NO  |
| 6. Can I <sub>2</sub> replace K?    | NO  |   |     |

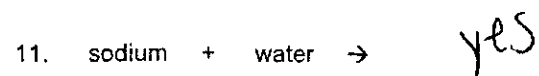
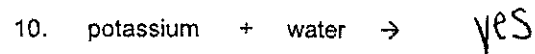
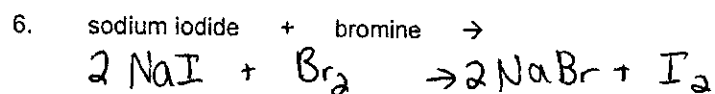
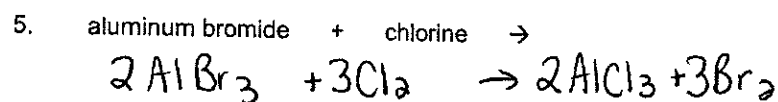
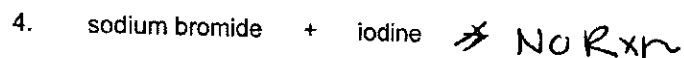
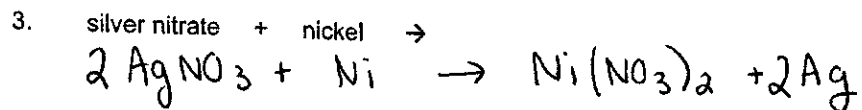
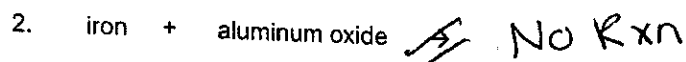
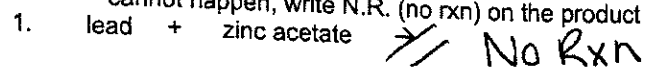
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### Worksheet #4: Single-Replacement Reactions

Step 1 - Write the formulas of the reactants on the left of the yield sign

Step 2 - Look at the Activity Series ~~on page 123 in the textbook~~ to determine if the replacement can happen.

Step 3 - If the replacement can occur, complete the reaction and balance it. If the reaction cannot happen, write N.R. (no rxn) on the product side.

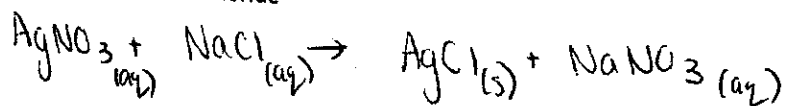


# Double Replacement Reactions WS

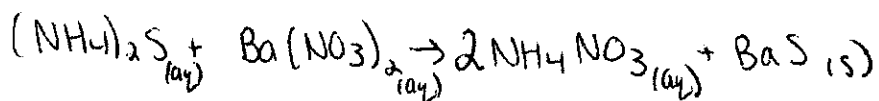
Name: \_\_\_\_\_

Write out the full balanced equation from the following reactants. Decide if the reaction will work in the lab because it is an acid-base reaction (type 4b) or because it will form a precipitate (solid) according to the Solubility Rules (type 4a), OR that it is "no rxn."

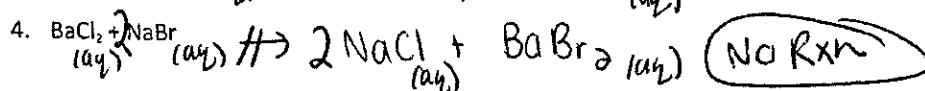
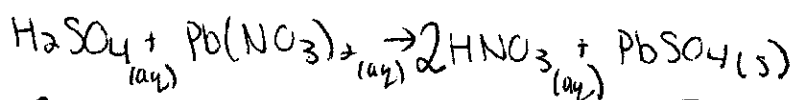
1. silver nitrate + sodium chloride



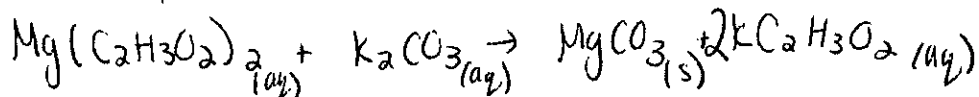
2. ammonium sulfide + barium nitrate



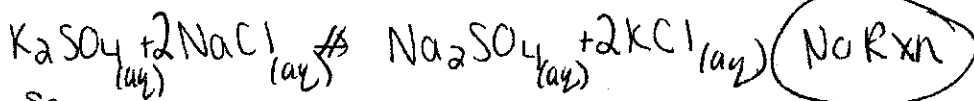
3. H<sub>2</sub>SO<sub>4</sub> + lead(II) nitrate



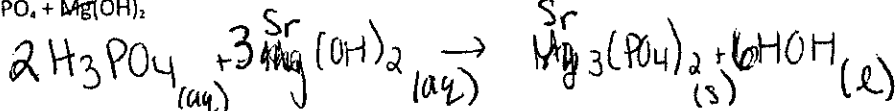
5. magnesium acetate + potassium carbonate



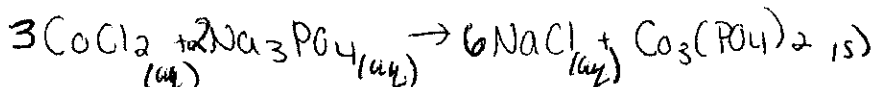
6. potassium sulfate + sodium chloride



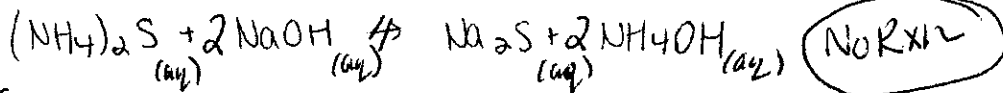
- \* 7. H<sub>3</sub>PO<sub>4</sub> + Sr(OH)<sub>2</sub>



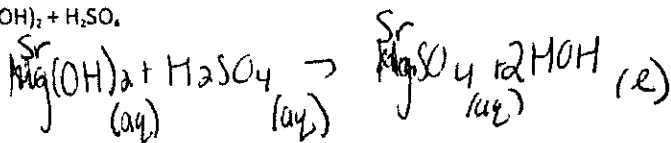
8. CoCl<sub>2</sub> + Na<sub>3</sub>PO<sub>4</sub>



9. ammonium sulfide + sodium hydroxide



- \* 10. Sr(OH)<sub>2</sub> + H<sub>2</sub>SO<sub>4</sub>

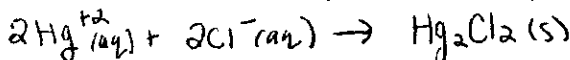
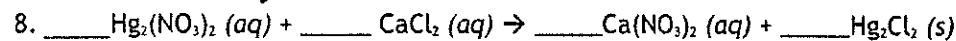
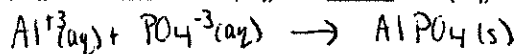
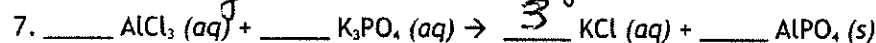
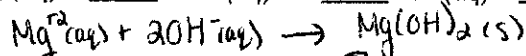
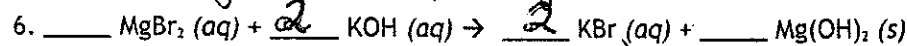
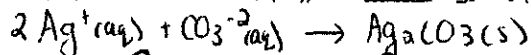
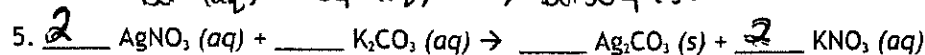
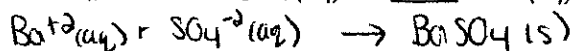
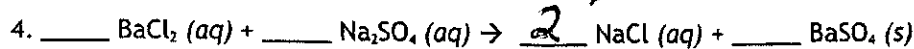
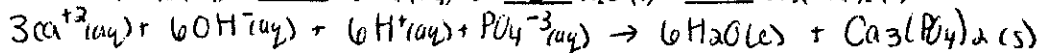
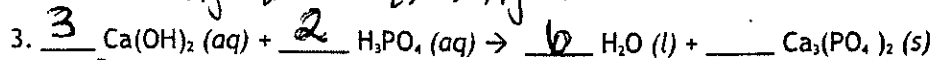
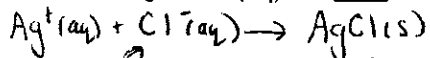
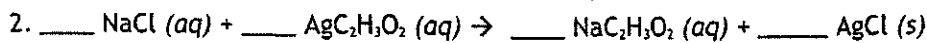
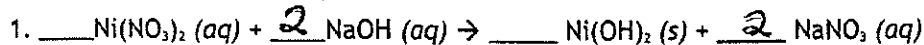


\* Do NOT write diatomics w/ a subscript in net ionic equations.

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

Net Ionic Equations Worksheet

BALANCE the following equations then write the NET IONIC EQUATION for each one:



Using the solubility rules, predict the products, balance the equation, and write the complete ionic and net ionic equations for each of the following reactions.

