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 333 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.
- 1. lead + zinc acetate ->
- 2. iron + aluminum oxide →
- 3. silver nitrate + nickel \rightarrow
- 4. sodium bromide + iodine \rightarrow
- 5. aluminum bromide + chlorine \rightarrow
- 6. sodium iodide + bromine \rightarrow
- 7. calcium + hydrochloric acid ->
- 8. magnesium + nitric acid \rightarrow
- 9. silver + sulfuric acid \rightarrow
- 10. potassium + water →
- 11. sodium + water →

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- 1. lead + zinc acetate ->

Pb +
$$Zn(C_2H_3O_2)_2 \rightarrow N.R.$$

2. iron + aluminum oxide →

Fe +
$$Al_2O_3$$
 \rightarrow N.R.

3. silver nitrate + nickel \rightarrow nickel(II) nitrate + silver

$$2AgNO_3 + Ni \rightarrow Ni(NO_3)_2 + 2Ag$$

4. sodium bromide + iodine \rightarrow

NaBr +
$$I_2 \rightarrow N.R.$$

5. aluminum bromide + chlorine \rightarrow aluminum chloride + bromine

$$2AIBr_3 + 3Cl_2 \rightarrow 2AICl_3 + 3Br_2$$

6. sodium iodide + bromine → sodium bromide + iodine

2Nal + Br₂
$$\rightarrow$$
 2NaBr + I₂

7. calcium + hydrochloric acid → calcium chloride + hydrogen

Ca + 2HCl
$$\rightarrow$$
 CaCl₂ + H₂

8. magnesium + nitric acid → magnesium nitrate + hydrogen

$$Mg + 2HNO_3 \rightarrow Mg(NO_3)_2 + H_2$$

9. silver + sulfuric acid \rightarrow

Ag +
$$H_2SO_4 \rightarrow N.R.$$

10. potassium + water \rightarrow potassium hydroxide + hydrogen

$$2K + 2H_2O \rightarrow 2KOH + H_2$$

11. sodium + water → sodium hydroxide + hydrogen

2Na +
$$2H_2O$$
 \rightarrow 2NaOH + H_2