

AP Worksheet 4d (Reactions in Aqueous Solution)

1. Consider the following reactants being brought together in aqueous solution. For each pair, decide the following and then fill in the table accordingly.

- Is there a reaction Write Y for yes or N for no.
- If there is a reaction write a full equation, if there is no reaction, write NR
- If there is a reaction classify it in two ways by choosing two types from the following list. If there is no reaction, write NR.

Precipitation, acid-base, REDOX, single replacement, double replacement, combination, decomposition, combustion

- If there is no reaction briefly explain why. If there is a reaction write R.

Reactants	Is there a reaction?	Full equation	Two applicable reaction types	Why no reaction?
Copper metal + Hydrochloric acid				
Potassium hydroxide + Sulfuric acid				
Zinc metal + Silver nitrate				
Copper(II) sulfate + Sodium hydroxide				
Sodium metal + Chlorine				
Lead(II) nitrate + Potassium chloride				

2. For the reaction of aqueous hydrochloric acid with the *hypothetical* aqueous metal hydroxide, $M(OH)_2$, write three separate equations: one showing the full reaction with full formula, one showing all the ions present in solution (ionic equation), and one showing the net ionic equation. In each case balance the equations that you write and be sure to show state symbols clearly. (Assume the salt produced is soluble.)

FULL:

IONIC:

NET IONIC: