**Predicting Chemical Equations Practice**

*Answer each question below by predicting the products of each chemical reaction (if a reaction occurs). Note that double and single replacement reactions are mixed and you must determine which type reaction it is in order to predict the products correctly.*

1. An aqueous solution of ammonium hydroxide is added to an aqueous solution of copper (II) chloride.

2. Magnesium metal is added to a solution of sulfuric acid.

3. Aqueous solutions of ammonium chloride and iron (II) sulfate are added together.

4. Solutions of strontium nitrate and sodium sulfate are mixed.

5. Iron pellets are added to a solution of nickel (II) nitrate.

6. Aqueous solutions of potassium hydroxide and cobalt (III) iodide are mixed.

7. Barium metal is added to a solution of chromium (III) iodide.

8. Aluminum foil is added to a solution of sodium acetate.

**Answer Key**

1. An aqueous solution of ammonium hydroxide is added to an aqueous solution of copper (II) chloride.

2 NH4OH (aq) + CuCl2 (aq) → Cu(OH)2 (s) + 2 NH4Cl (aq)

2. Magnesium metal is added to a solution of sulfuric acid.

Mg (s) + H2SO4 (aq) → MgSO4 (aq) + H2 (g)

3. Aqueous solutions of ammonium chloride and iron (II) sulfate are added together.

No reaction

4. Solutions of strontium nitrate and sodium sulfate are mixed.

Sr(NO3)2 (aq) + Na2SO4 (aq) → 2 NaNO3 (aq) + SrSO4 (s)

5. Iron pellets are added to a solution of nickel (II) nitrate.

Fe (s) + Ni(NO3)2 → Fe(NO3)2 (aq) + Ni (s)

6. Aqueous solutions of potassium hydroxide and cobalt (III) iodide are mixed.

3 KOH (aq) + CoI3 (aq) → 3 KI (aq) + Co(OH)3 (s)

7. Barium metal is added to a solution of chromium (III) iodide.

3 Ba (s) + 2 CrI3 (aq) → 3 BaI2 (aq) + 2 Cr (s)

8. Aluminum foil is added to a solution of sodium acetate.

No reaction