



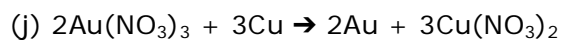
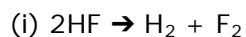
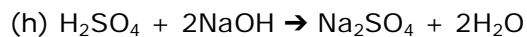
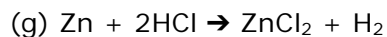
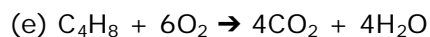
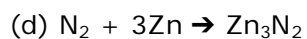
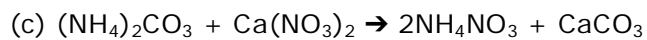
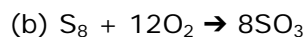
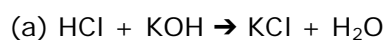
Section 6.1

Types of Chemical Reactions

Check Your Understanding

Checking Concepts

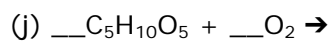
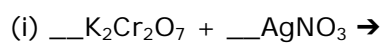
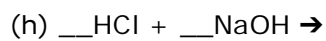
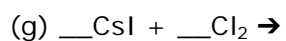
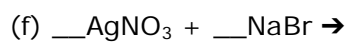
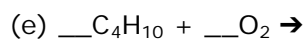
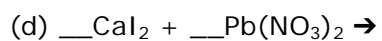
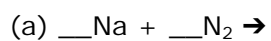
1. Identify each of the following chemical reactions as synthesis, decomposition, single replacement, double replacement, neutralization (acid-base), or combustion.



Understanding Key Ideas

- Combustion and single replacement reactions both involve an element reacting with a compound. How can you tell the difference between these two reactions by looking only at the reactants?
- No classification system is perfect. Find an example in this chapter of a chemical reaction that could be classified in more than one way.
- Classify each of the following reactions, and write balanced formula equations for them.
 - sodium + oxygen \rightarrow sodium oxide
 - sodium sulphate + calcium chloride \rightarrow sodium chloride + calcium sulphate
 - propane (C_3H_8) + oxygen \rightarrow carbon dioxide + water
 - sulphuric acid + potassium hydroxide \rightarrow potassium sulphate + water
 - aluminum chloride \rightarrow aluminum + chlorine
 - cadmium + gold(III) nitrate \rightarrow cadmium nitrate + gold
 - strontium hydroxide + lead(II) bromide \rightarrow strontium bromide + lead(II) hydroxide
 - glucose ($C_6H_{12}O_6$) + oxygen \rightarrow carbon dioxide + water
 - nitrogen + oxygen \rightarrow dinitrogen trioxide
 - nitric acid + zinc \rightarrow zinc nitrate + hydrogen

5. Classify each reaction, and write the formula of each product or products. Balance the equation.



6. Write the balanced formula equation for the synthesis of iron(III) chloride from its elements.

Pause and Reflect

When classifying a reaction, why might it *not* be helpful to consider whether the reaction produces water?