

Chemical Reaction Types

Name _____

Period _____

Identify each chemical reaction as a synthesis (combination), decomposition, single-replacement, double-replacement, or combustion reaction.

- $2\text{SO}_2 + \text{O}_2 \rightarrow 2\text{SO}_3$ _____
- $\text{Al}_2(\text{SO}_4)_3 + 3\text{Ca}(\text{OH})_2 \rightarrow 2\text{Al}(\text{OH})_3 + 3\text{CaSO}_4$ _____
- $2\text{C}_2\text{H}_2 + 5\text{O}_2 \rightarrow 4\text{CO}_2 + 2\text{H}_2\text{O}$ _____
- $\text{Mg} + 2\text{AgNO}_3 \rightarrow \text{Mg}(\text{NO}_3)_2 + 2\text{Ag}$ _____
- $3\text{Ba}(\text{NO}_3)_2 + 2\text{H}_3\text{PO}_4 \rightarrow \text{Ba}_3(\text{PO}_4)_2 + 6\text{HNO}_3$ _____
- $\text{Mg}(\text{ClO}_3)_2 \rightarrow \text{MgCl}_2 + 3\text{O}_2$ _____
- $2\text{Be} + \text{O}_2 \rightarrow 2\text{BeO}$ _____
- $2\text{Al} + 3\text{CuSO}_4 \rightarrow \text{Al}_2(\text{SO}_4)_3 + 3\text{Cu}$ _____
- $2\text{PbO}_2 \rightarrow 2\text{PbO} + \text{O}_2$ _____
- $2\text{C}_2\text{H}_6 + 7\text{O}_2 \rightarrow 4\text{CO}_2 + 6\text{H}_2\text{O}$ _____

Complete the chemical equations for the following SYNTHESIS (COMBINATION) reactions.

- $\text{Mg} + \text{O}_2 \rightarrow$
- $\text{Ca} + \text{S} \rightarrow$
- $\text{Na} + \text{O}_2 \rightarrow$
- $\text{Na} + \text{Cl}_2 \rightarrow$
- $\text{Al} + \text{O}_2 \rightarrow$

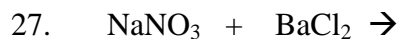
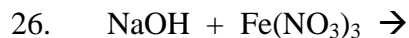
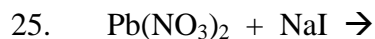
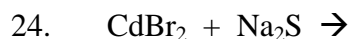
Use the activity series of metals to complete the following SINGLE-REPLACEMENT reactions. Write "NR" if there is no reaction.

- $\text{Zn}(\text{s}) + \text{AgNO}_3 \rightarrow$
- $\text{Au}(\text{s}) + \text{KNO}_3 \rightarrow$
- $\text{Al}(\text{s}) + \text{H}_2\text{SO}_4 \rightarrow$
- $\text{Cu}(\text{s}) + \text{H}_2\text{O} \rightarrow$
- $\text{Al}(\text{s}) + \text{CuSO}_4 \rightarrow$

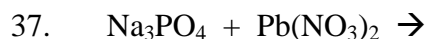
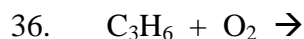
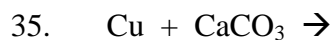
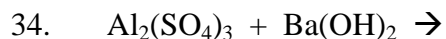
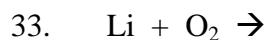
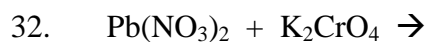
Write the chemical equation for the complete COMBUSTION of the following compounds.

- octane (C_8H_{18}) $\text{C}_8\text{H}_{18} + \underline{\hspace{2cm}} \rightarrow \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
- glucose ($\text{C}_6\text{H}_{12}\text{O}_6$) $\text{C}_6\text{H}_{12}\text{O}_6 + \underline{\hspace{2cm}} \rightarrow \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

Complete the chemical equations for the following DOUBLE-REPLACEMENT reactions.



Write the type of reaction on the line. Then, predict the products of each reaction to complete the chemical equation. Write the correct formulas of the products after the arrow. Write "NR" if there is no reaction.



Write the chemical equation for the following reactions. Remember the diatomics. Use appropriate state symbols.

38. Solid silver carbonate decomposes into solid silver oxide and gaseous carbon dioxide when heated.

39. Adding chlorine gas to a solution of potassium iodide gives solid iodine and a solution of potassium chloride.

40. Iodine crystals react with chlorine gas to form solid iodine trichloride.