

Classifying and Balancing Equations

Goal • Use this page to practise classifying and balancing reactions.

What to Do

Classify each reaction as a synthesis (S), decomposition (D), single replacement (SR), double replacement (DR), or combustion (C) reaction. Then, balance each equation.

	Reaction	Classification
1.	$\text{Li} + \text{AlCl}_3 \rightarrow \text{Al} + \text{LiCl}$	
2.	$\text{NH}_3 \rightarrow \text{N}_2 + \text{H}_2$	
3.	$\text{K} + \text{Br}_2 \rightarrow \text{KBr}$	
4.	$\text{C}_{10}\text{H}_{22} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$	
5.	$\text{NH}_4\text{OH} + \text{H}_2\text{CO}_3 \rightarrow \text{H}_2\text{O} + (\text{NH}_4)_2\text{CO}_3$	
6.	$\text{H}_2\text{O} \rightarrow \text{H}_2 + \text{O}_2$	
7.	$\text{Al} + \text{Cl}_2 \rightarrow \text{AlCl}_3$	
8.	$\text{Zn} + \text{SnF}_4 \rightarrow \text{Sn} + \text{ZnF}_2$	
9.	$\text{Ni} + \text{HCl} \rightarrow \text{NiCl}_2 + \text{H}_2$	
10.	$\text{Au}(\text{CN})_3 + \text{Zn} \rightarrow \text{Au} + \text{Zn}(\text{CN})_2$	
11.	$\text{O}_2 + \text{Be} \rightarrow \text{BeO}$	
12.	$\text{FeCl}_3 + \text{Na}_2\text{SO}_3 \rightarrow \text{NaCl} + \text{Fe}_2(\text{SO}_3)_3$	
13.	$\text{C}_8\text{H}_{18} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$	
14.	$(\text{NH}_4)_2\text{S} + \text{Mn}(\text{NO}_3)_2 \rightarrow \text{NH}_4\text{NO}_3 + \text{MnS}$	
15.	$\text{P}_4 + \text{F}_2 \rightarrow \text{PF}_3$	
16.	$\text{Al}_2(\text{SO}_4)_3 + \text{Na}_3\text{PO}_4 \rightarrow \text{Na}_2\text{SO}_4 + \text{AlPO}_4$	
17.	$\text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + \text{O}_2$	
18.	$\text{H}_3(\text{PO}_4) + \text{Cu}(\text{OH})_2 \rightarrow \text{H}_2\text{O} + \text{Cu}_3(\text{PO}_4)_2$	