

Use with textbook pages 206–211.

Balancing equations

Starting with the skeleton equations, balance the following equations by adding coefficients where appropriate.

- $\text{H}_2 + \text{F}_2 \rightarrow \text{HF}$ _____
- $\text{Sn} + \text{O}_2 \rightarrow \text{SnO}$ _____
- $\text{MgCl}_2 \rightarrow \text{Mg} + \text{Cl}_2$ _____
- $\text{KNO}_3 \rightarrow \text{KNO}_2 + \text{O}_2$ _____
- $\text{BN} + \text{F}_2 \rightarrow \text{BF}_3 + \text{N}_2$ _____
- $\text{CuI}_2 + \text{Fe} \rightarrow \text{FeI}_2 + \text{Cu}$ _____
- $\text{Li} + \text{H}_2\text{O} \rightarrow \text{LiOH} + \text{H}_2$ _____
- $\text{NH}_3 + \text{O}_2 \rightarrow \text{N}_2 + \text{H}_2\text{O}$ _____
- $\text{V}_2\text{O}_5 + \text{Ca} \rightarrow \text{CaO} + \text{V}$ _____
- $\text{C}_9\text{H}_6\text{O}_4 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$ _____
- $\text{H}_2\text{S} + \text{PbCl}_2 \rightarrow \text{PbS} + \text{HCl}$ _____
- $\text{C}_3\text{H}_7\text{OH} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$ _____
- $\text{Zn} + \text{CuSO}_4 \rightarrow \text{Cu} + \text{ZnSO}_4$ _____
- $\text{C}_6\text{H}_{12}\text{O}_6 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$ _____
- $\text{C}_2\text{H}_5\text{OH} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$ _____
- $\text{Al} + \text{H}_2\text{SO}_4 \rightarrow \text{H}_2 + \text{Al}_2(\text{SO}_4)_3$ _____
- $\text{FeCl}_3 + \text{Ca}(\text{OH})_2 \rightarrow \text{Fe}(\text{OH})_3 + \text{CaCl}_2$ _____
- $\text{Pb}(\text{NO}_3)_2 + \text{K}_2\text{CrO}_4 \rightarrow \text{PbCrO}_4 + \text{KNO}_3$ _____
- $\text{Cd}(\text{NO}_3)_2 + (\text{NH}_4)_2\text{S} \rightarrow \text{CdS} + \text{NH}_4\text{NO}_3$ _____
- $\text{Ca}(\text{OH})_2 + \text{NH}_4\text{Cl} \rightarrow \text{NH}_3 + \text{CaCl}_2 + \text{H}_2\text{O}$ _____

Use with textbook pages 202-211.

Word equations

Write the skeleton equation for each of the following reactions. Then balance each of the following chemical equations.

1. hydrogen + oxygen \rightarrow water

2. iron(III) oxide + hydrogen \rightarrow water + iron

3. sodium + water \rightarrow sodium hydroxide + hydrogen

4. calcium carbide + oxygen \rightarrow calcium + carbon dioxide

5. potassium iodide + chlorine \rightarrow potassium chloride + iodine

6. chromium + tin(IV) chloride \rightarrow chromium(III) chloride + tin

7. magnesium + copper(II) sulphate \rightarrow magnesium sulphate + copper

8. zinc sulphate + strontium chloride \rightarrow zinc chloride + strontium sulphate

9. ammonium chloride + lead(III) nitrate \rightarrow ammonium nitrate + lead(III) chloride

10. iron(III) nitrate + magnesium sulphide \rightarrow iron(III) sulphide + magnesium nitrate

11. aluminum chloride + sodium carbonate \rightarrow aluminum carbonate + sodium chloride

12. sodium phosphate + calcium hydroxide \rightarrow sodium hydroxide + calcium phosphate
