

GROUP A

Write balanced chemical equations for these reactions and identify the type of reaction. Do not write in this book. A2-A5

1. zinc + sulfur \rightarrow zinc sulfide.
2. potassium chloride + silver nitrate \rightarrow silver chloride(s) + potassium nitrate.
3. calcium oxide + water \rightarrow calcium hydroxide.
4. sodium hydroxide + hydrochloric acid (HCl) \rightarrow sodium chloride + water.
5. magnesium bromide + chlorine \rightarrow magnesium chloride + bromine.
6. sodium chloride + sulfuric acid (H₂SO₄) \rightarrow sodium sulfate + hydrogen chloride(g).
7. aluminum + iron(III) oxide \rightarrow aluminum oxide + iron.
8. ammonium nitrite \rightarrow nitrogen(g) + water.
9. silver nitrate + nickel \rightarrow nickel(II) nitrate + silver(s).
10. hydrogen + bromine \rightarrow hydrogen bromide(g).

Complete the word equation and write the balanced chemical equation. Give a reason for the product(s) in each case. Consult the activity series in Table 8-2, and solubilities in Appendix Table 12, as necessary. A2-A5

29. potassium + water \rightarrow
30. sodium iodide + bromine \rightarrow
31. silver + sulfur \rightarrow
32. sodium chlorate \rightarrow
33. carbon + steam (H₂O) \rightarrow carbon monoxide(g) + hydrogen(g).
34. zinc + lead(II) acetate \rightarrow
35. iron(III) hydroxide \rightarrow
36. iron(III) oxide + carbon monoxide \rightarrow iron + carbon dioxide(g).
37. lead(II) acetate + hydrogen sulfide \rightarrow
38. aluminum bromide + chlorine \rightarrow
39. magnesium carbonate \rightarrow
40. iron(III) chloride + sodium hydroxide \rightarrow

GROUP B

If the word equation is complete, write and balance the chemical equation. If the word equation is incomplete, complete it. Write and balance the formula equation. Tell the type of reaction. Give a reason for the product(s). A2-A5

23. barium chloride + sodium sulfate \rightarrow
24. calcium + hydrochloric acid \rightarrow
25. iron(II) sulfide + hydrochloric acid \rightarrow hydrogen sulfide(g) +
26. zinc chloride + ammonium sulfide \rightarrow
27. ammonia (NH₃) + oxygen \rightarrow nitric acid (HNO₃) + water.
28. magnesium + nitric acid \rightarrow

41. calcium oxide + diphosphorus pentoxide \rightarrow calcium phosphate.
42. chromium + oxygen \rightarrow
43. sodium + water \rightarrow
44. calcium carbonate + hydrochloric acid \rightarrow
45. calcium hydroxide + phosphoric acid (H₃PO₄) \rightarrow
46. sodium carbonate + nitric acid \rightarrow
47. aluminum hydroxide + sulfuric acid \rightarrow
48. sodium sulfite + sulfuric acid \rightarrow
49. copper + sulfuric acid \rightarrow copper(II) sulfate + water + sulfur dioxide(g).
50. calcium hydroxide + ammonium sulfate \rightarrow calcium sulfate + water + ammonia(g).