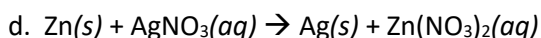
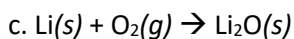
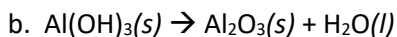
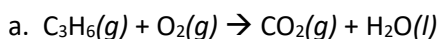


12. Write the formula for the binary compound that decomposes to the products H_2 and Br_2 .
13. Complete and balance this decomposition reaction. $\text{HI} \rightarrow$
14. Write and balance the equation for the formation of magnesium nitride (Mg_3N_2) from its elements.
15. Complete the equations for these single-replacement reactions in aqueous solution. Balance each equation. Write "no reaction" if a reaction does not occur.
- $\text{Fe}(s) + \text{Pb}(\text{NO}_3)_2(aq) \rightarrow$
 - $\text{Cl}_2(g) + \text{NaI}(aq) \rightarrow$
 - $\text{Ca}(s) + \text{H}_2\text{O}(l) \rightarrow$
 - $\text{Zn}(s) + \text{H}_2\text{SO}_4(aq) \rightarrow$
16. Write the products of these double-replacement reactions. Then balance each equation.
- $\text{NaOH}(aq) + \text{Fe}(\text{NO}_3)_3(aq) \rightarrow$ (iron (III) hydroxide is a precipitate)
 - $\text{Ba}(\text{NO}_3)_2(aq) + \text{H}_3\text{PO}_4(aq) \rightarrow$ (barium phosphate is a precipitate)
 - $\text{FeS}(s) + \text{HCl}(aq) \rightarrow$ (hydrogen sulfide gas (H_2S) is formed)
17. Write a balanced equation for each reaction.
- $\text{KOH}(aq) + \text{H}_3\text{PO}_4(aq) \rightarrow$ (water is formed)
 - $\text{AgNO}_3(aq) + \text{NaCl}(s) \rightarrow$ (silver chloride is a precipitate)
 - $\text{Ca}(\text{OH})_2(aq) + \text{H}_3\text{PO}_4(aq) \rightarrow$ (water is formed)
 - $\text{KI}(aq) + \text{Pb}(\text{NO}_3)_2(aq) \rightarrow$ (lead (II) iodide is a precipitate)
 - $\text{H}_2\text{SO}_4(aq) + \text{Al}(\text{OH})_3(aq) \rightarrow$ water is formed
18. Write a balanced equation for the complete combustion of each compound.
- formaldehyde (CH_2O)
 - heptane (C_7H_{16})
 - benzene (C_6H_6)
19. Write a balanced equation for the complete combustion of
- glucose ($\text{C}_6\text{H}_{12}\text{O}_6$)
 - acetone ($\text{C}_3\text{H}_6\text{O}$)
 - pentanol ($\text{C}_5\text{H}_{12}\text{O}$)
20. What are the 5 types of chemical reactions?

21. Classify each reaction and balance the equations.



22. Which of the five general types of reaction would most likely occur, given each set of reactants? What are the probable products?

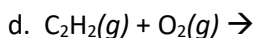
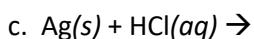
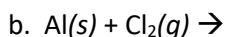
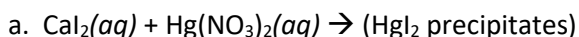
a. an aqueous solution of two ionic compounds

b. a single compound

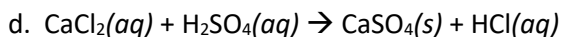
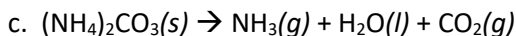
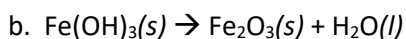
c. two elements

d. oxygen and a compound of carbon and hydrogen

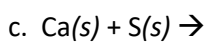
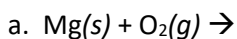
23. Complete and balance an equation for each reaction.



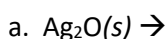
37. Balance the following equations:



38. Write balanced chemical equations for the following combination reactions.

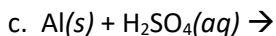
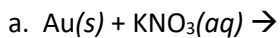


39. Write a balanced chemical equation for each decomposition reaction.

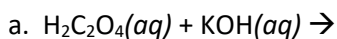


b. ammonium nitrate \rightarrow dinitrogen monoxide + water

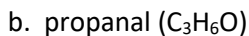
40. Use the activity series of metals to write a balanced chemical equation for each single-replacement reaction.



41. Write a balanced equation for each of the following double-replacement reactions.



42. Write a balanced equation for the complete combustion of each compound.



43. Balance each equation and identify its type.

