

Equation Challenge Answer Key

1. $\text{Cl}_2 + 2\text{NaBr} \rightarrow 2\text{NaCl} + \text{Br}_2$
2. Hydrogen – 4, Sulfur – 2, Oxygen – 8
3. $2\text{HCl} + \text{CaCO}_3 \rightarrow \text{CaCl}_2 + \text{H}_2\text{O} + \text{CO}_2$
4. Calcium – 4, Carbon – 4, Oxygen - 12
5. $4\text{Na} + \text{O}_2 \rightarrow 2\text{Na}_2\text{O}$
6. $2\text{NaClO}_3 \rightarrow 2\text{NaCl} + 3\text{O}_2$
7. $8\text{Ag}_2\text{S} \rightarrow 16\text{Ag} + \text{S}_8$
8. $\text{CuCl}_2 + \text{H}_2\text{S} \rightarrow \text{CuS} + 2\text{HCl}$
9. $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
10. $2\text{Al}_2\text{O}_3 \rightarrow 4\text{Al} + 3\text{O}_2$
11. Aluminum – 3, Oxygen -9, Hydrogen -9
12. Aluminum – 8, Oxygen – 12
13. $2\text{Al} + \text{Fe}_3\text{N}_2 \rightarrow 2\text{AlN} + 3\text{Fe}$
14. $\text{P}_4 + 5\text{O}_2 \rightarrow \text{P}_4\text{O}_{10}$
15. Synthesis
16. $\text{SiCl}_4 \rightarrow \text{Si} + 2\text{Cl}_2$
17. Decomposition
18. $3\text{H}_2 + \text{N}_2 \rightarrow 2\text{NH}_3$
19. $\text{P}_4 + 3\text{O}_2 \rightarrow \text{P}_4\text{O}_6$
20. $\text{C} + 2\text{H}_2 \rightarrow \text{CH}_4$
21. $3\text{Fe} + 4\text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + 4\text{H}_2$
22. $4\text{Fe} + 3\text{O}_2 \rightarrow 2\text{Fe}_2\text{O}_3$
23. Single Replacement
24. $2\text{HgO} \rightarrow 2\text{Hg} + \text{O}_2$
25. Magnesium Chloride
26. $\text{Mg} + 2\text{HCl} \rightarrow \text{H}_2 + \text{MgCl}_2$
27. Sodium Hydroxide
28. $2\text{Na} + \text{Br}_2 \rightarrow 2\text{NaBr}$
29. Sulfuric Acid
30. $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$
31. Sodium Chloride (Salt)
32. $2\text{Na} + \text{Cl}_2 \rightarrow 2\text{NaCl}$
33. Dihydrogen Monoxide (Water)
34. $4\text{P} + 4\text{O}_2 \rightarrow \text{P}_4\text{O}_8$
35. Aluminum – 8, Oxygen – 12
36. $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$
37. Single Replacement
38. $2\text{NaCl} + \text{F}_2 \rightarrow 2\text{NaF} + \text{Cl}_2$
39. Carbon Monoxide
40. $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$
41. Double Replacement
42. $4\text{P} + 5\text{O}_2 \rightarrow 2\text{P}_2\text{O}_5$
43. Carbon Dioxide
44. $2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$
45. Hydrogen – 4, Sulfur – 2, Oxygen - 8
46. $2\text{Ag}_2\text{O} \rightarrow 4\text{Ag} + \text{O}_2$
47. Magnesium – 4, Oxygen – 8, Hydrogen - 8
48. $2\text{HgO} + \text{Cl}_2 \rightarrow 2\text{HgCl} + \text{O}_2$
49. $2\text{H}_2\text{O} + \text{O}_2 \rightarrow 2\text{H}_2\text{O}_2$
50. $\text{S}_8 + 12\text{O}_2 \rightarrow 8\text{SO}_3$
51. Barium – 4, Sulfur – 4, Oxygen – 16
52. $2\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O}$
53. Nitrogen – 6, Hydrogen – 24
- ★54. $2\text{C}_2\text{H}_6 + 7\text{O}_2 \rightarrow 4\text{CO}_2 + 6\text{H}_2\text{O}$
- ★55. $2\text{NH}_3 + \text{H}_2\text{SO}_4 \rightarrow (\text{NH}_4)_2 + \text{SO}_4$
- ★56. $2\text{H}_2\text{O}_2 \rightarrow 2\text{H}_2\text{O} + \text{O}_2$
- ★57. $\text{C}_3\text{H}_8 + 5\text{O}_2 \rightarrow 3\text{CO}_2 + 4\text{H}_2\text{O}$
- ★58. $3\text{ZnS} + 2\text{AlP} \rightarrow \text{Zn}_3\text{P}_2 + \text{Al}_2\text{S}_3$
- ★59. $\text{BaCl}_2 + \text{H}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + 2\text{HCl}$
- ★60. $2\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O}$

★ = Bonus Problem = 2 points