

Worksheet Balancing Word Equations Chapter 10
(Remember the following are diatomic: H₂, N₂, O₂, F₂, Cl₂, Br₂, I₂)

The coefficients should add up to the number at the end that is in parenthesis.

1. carbon + oxygen → carbon dioxide (0)
2. copper + silver nitrate → copper(II) nitrate + silver (4)
3. zinc + copper(II) sulfate → zinc sulfate + copper (0)
4. mercury(II) nitrate + ammonium sulfide → mercury(II) sulfide + ammonium nitrate (2)
5. iron(III) hydroxide → iron(III) oxide + water (5)
6. water → hydrogen + oxygen (4)
7. copper(II) nitrate + water → hydrogen nitrate + copper(II) hydroxide (4)
8. phosphorus + oxygen → diphosphorous pentoxide (11)
9. iron + hydrochloric acid → iron(II) chloride + hydrogen (2)
10. sodium hydroxide + phosphoric acid → sodium phosphate + water (6)
11. antimony + chlorine → antimony trichloride (7)
12. sodium chlorate → sodium chloride + oxygen (7)
13. sodium carbonate + water → sodium oxide + hydrogen carbonate (0)
14. silver + sulfur → silver sulfide (2)
15. potassium + water → potassium hydroxide + hydrogen (6)
16. barium chloride + magnesium sulfate → barium sulfate + magnesium chloride (0)
17. sodium bromide + chlorine → sodium chloride + bromine (4)
18. ammonium carbonate → ammonia (NH₃) + carbonic acid(2)
19. calcium carbonate + hydrochloric acid → calcium chloride + hydrogen carbonate (2)
20. zinc chloride + phosphoric acid → zinc phosphate + hydrogen chloride (11)
21. mercury(II) oxide → mercury + oxygen(4)
22. sodium sulfite + acetic acid → hydrogen sulfite + sodium acetate (4)
23. ammonium nitrate + potassium hydroxide → ammonium hydroxide + potassium nitrate (0)
24. silver sulfate + aluminum chloride → silver chloride + aluminum sulfate (11)
25. barium sulfide + water → barium oxide + hydrogen sulfide (0)

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The coefficients should add up to the number at the end that is in parenthesis.

1. carbon + oxygen → carbon dioxide (0)

$$\text{C} + \text{O}_2 \rightarrow \text{CO}_2$$
2. copper + silver nitrate → copper(II) nitrate + silver (4)

$$\text{Cu} + 2 \text{AgNO}_3 \rightarrow \text{Cu(NO}_3)_2 + 2\text{Ag}$$
3. zinc + copper(II) sulfate → zinc sulfate + copper (0)

$$\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$$
4. mercury(II) nitrate + ammonium sulfide → mercury(II) sulfide + ammonium nitrate (2)

$$\text{Hg(NO}_3)_2 + (\text{NH}_4)_2\text{S} \rightarrow \text{HgS} + 2 \text{NH}_4\text{NO}_3$$
5. iron(III) hydroxide → iron(III) oxide + water (5)

$$2 \text{Fe(OH)}_3 \rightarrow \text{Fe}_2\text{O}_3 + 3 \text{H}_2\text{O}$$
6. water → hydrogen + oxygen (4)

$$2 \text{H}_2\text{O} \rightarrow 2 \text{H}_2 + \text{O}_2$$
7. copper(II) nitrate + water → hydrogen nitrate + copper(II) hydroxide (4)

$$\text{Cu(NO}_3)_2 + 2 \text{H}_2\text{O} \rightarrow 2 \text{HNO}_3 + \text{Cu(OH)}_2$$
8. phosphorus + oxygen → diphosphorous pentoxide (11)

$$4 \text{P} + 5 \text{O}_2 \rightarrow 2\text{P}_2\text{O}_5$$
9. iron + hydrochloric acid → iron(II) chloride + hydrogen (2)

$$\text{Fe} + 2 \text{HCl} \rightarrow \text{FeCl}_2 + \text{H}_2$$
10. sodium hydroxide + phosphoric acid → sodium phosphate + water (6)

$$3\text{NaOH} + \text{H}_3\text{PO}_4 \rightarrow \text{Na}_3\text{PO}_4 + 3 \text{H}_2\text{O}$$
11. antimony + chlorine → antimony trichloride (7)

$$2 \text{Sb} + 3 \text{Cl}_2 \rightarrow 2 \text{SbCl}_3$$
12. sodium chlorate → sodium chloride + oxygen (7)

$$2 \text{NaClO}_3 \rightarrow 2 \text{NaCl} + 3 \text{O}_2$$
13. sodium carbonate + water → sodium oxide + hydrogen carbonate (0)

$$\text{Na}_2\text{CO}_3 + \text{H}_2\text{O} \rightarrow \text{Na}_2\text{O} + \text{H}_2\text{CO}_3$$
14. silver + sulfur → silver sulfide (2)

$$2\text{Ag} + \text{S} \rightarrow \text{Ag}_2\text{S}$$
15. potassium + water → potassium hydroxide + hydrogen (6)

$$2 \text{K} + 2 \text{H}_2\text{O} \rightarrow 2 \text{KOH} + \text{H}_2$$
16. barium chloride + magnesium sulfate → barium sulfate + magnesium chloride (0)

$$\text{BaCl}_2 + \text{MgSO}_4 \rightarrow \text{BaSO}_4 + \text{MgCl}_2$$
17. sodium bromide + chlorine → sodium chloride + bromine (4)

$$2 \text{NaBr} + \text{Cl}_2 \rightarrow 2 \text{NaCl} + \text{Br}_2$$
18. ammonium carbonate → ammonia (NH₃) + carbonic acid(2)

$$(\text{NH}_4)_2\text{CO}_3 \rightarrow 2 \text{NH}_3 + \text{H}_2\text{CO}_3$$
19. calcium carbonate + hydrochloric acid → calcium chloride + hydrogen carbonate (2)

$$\text{CaCO}_3 + 2 \text{HCl} \rightarrow 2 \text{NH}_3 + \text{H}_2\text{CO}_3$$
20. zinc chloride + phosphoric acid → zinc phosphate + hydrogen chloride (11)

$$3 \text{ZnCl}_2 + 2 \text{H}_3\text{PO}_4 \rightarrow \text{Zn}_3(\text{PO}_4)_2 + 6 \text{HCl}$$
21. mercury(II) oxide → mercury + oxygen(4)

$$2 \text{HgO} \rightarrow 2 \text{Hg} + \text{O}_2$$
22. sodium sulfite + acetic acid → hydrogen sulfite + sodium acetate (4)

$$\text{Na}_2\text{SO}_3 + 2 \text{HC}_2\text{H}_3\text{O}_2 \rightarrow \text{H}_2\text{SO}_3 + 2 \text{NaC}_2\text{H}_3\text{O}_2$$
23. ammonium nitrate + potassium hydroxide → ammonium hydroxide + potassium nitrate (0)

$$\text{NH}_4\text{NO}_3 + \text{KOH} \rightarrow \text{NH}_4\text{OH} + \text{KNO}_3$$
24. silver sulfate + aluminum chloride → silver chloride + aluminum sulfate (11)

$$3 \text{Ag}_2\text{SO}_4 + 2 \text{AlCl}_3 \rightarrow 6 \text{AgCl} + \text{Al}_2(\text{SO}_4)_3$$
25. barium sulfide + water → barium oxide + hydrogen sulfide (0)

$$\text{BaS} + \text{H}_2\text{O} \rightarrow \text{BaO} + \text{H}_2\text{S}$$

1. $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$
2. $\text{Cu} + 2 \text{AgNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + 2\text{Ag}$
3. $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$
4. $\text{Hg}(\text{NO}_3)_2 + (\text{NH}_4)_2\text{S} \rightarrow \text{HgS} + 2 \text{NH}_4\text{NO}_3$
5. $2 \text{Fe}(\text{OH})_3 \rightarrow \text{Fe}_2\text{O}_3 + 3 \text{H}_2\text{O}$
6. $2 \text{H}_2\text{O} \rightarrow 2 \text{H}_2 + \text{O}_2$
7. $\text{Cu}(\text{NO}_3)_2 + 2 \text{H}_2\text{O} \rightarrow 2 \text{HNO}_3 + \text{Cu}(\text{OH})_2$
8. $4 \text{P} + 5 \text{O}_2 \rightarrow 2\text{P}_2\text{O}_5$
9. $\text{Fe} + 2 \text{HCl} \rightarrow \text{FeCl}_2 + \text{H}_2$
10. $3\text{NaOH} + \text{H}_3\text{PO}_4 \rightarrow \text{Na}_3\text{PO}_4 + 3 \text{H}_2\text{O}$
11. $2 \text{Sb} + 3 \text{Cl}_2 \rightarrow 2 \text{SbCl}_3$
12. $2 \text{NaClO}_3 \rightarrow 2 \text{NaCl} + 3 \text{O}_2$
13. $\text{Na}_2\text{CO}_3 + \text{H}_2\text{O} \rightarrow \text{Na}_2\text{O} + \text{H}_2\text{CO}_3$
14. $2\text{Ag} + \text{S} \rightarrow \text{Ag}_2\text{S}$
15. $2 \text{K} + 2 \text{H}_2\text{O} \rightarrow 2 \text{KOH} + \text{H}_2$
16. $\text{BaCl}_2 + \text{MgSO}_4 \rightarrow \text{BaSO}_4 + \text{MgCl}_2$
17. $2 \text{NaBr} + \text{Cl}_2 \rightarrow 2 \text{NaCl} + \text{Br}_2$
18. $(\text{NH}_4)_2\text{CO}_3 \rightarrow 2 \text{NH}_3 + \text{H}_2\text{CO}_3$
19. $\text{CaCO}_3 + 2 \text{HCl} \rightarrow 2 \text{NH}_3 + \text{H}_2\text{CO}_3$
20. $3 \text{ZnCl}_2 + 2 \text{H}_3\text{PO}_4 \rightarrow \text{Zn}_3(\text{PO}_4)_2 + 6 \text{HCl}$
21. $2 \text{HgO} \rightarrow 2 \text{Hg} + \text{O}_2$
22. $\text{Na}_2\text{SO}_3 + 2 \text{HC}_2\text{H}_3\text{O}_2 \rightarrow \text{H}_2\text{SO}_3 + 2 \text{NaC}_2\text{H}_3\text{O}_2$
23. $\text{NH}_4\text{NO}_3 + \text{KOH} \rightarrow \text{NH}_4\text{OH} + \text{KNO}_3$
24. $3 \text{Ag}_2\text{SO}_4 + 2 \text{AlCl}_3 \rightarrow 6 \text{AgCl} + \text{Al}_2(\text{SO}_4)_3$
25. $\text{BaS} + \text{H}_2\text{O} \rightarrow \text{BaO} + \text{H}_2\text{S}$