



BALANCE THE GIVEN CHEMICAL EQUATIONS

Worksheet - 86

1. $\text{Al} + 6 \text{HCl} = \text{AlCl}_3 + 3 \text{H}_2$
2. $\text{Mg}_3\text{N}_2(\text{s}) + \text{H}_2\text{O}(\text{l}) = 3 \text{Mg}(\text{OH})_2(\text{s}) + \text{NH}_3(\text{g})$
3. $\text{NaOH} + \text{H}_3\text{PO}_4 = \text{Na}_3\text{PO}_4 + \text{H}_2\text{O}$
4. $\text{Cu} + 8 \text{HNO}_3 = \text{Cu}(\text{NO}_3)_2 + 2 \text{NO} + 4 \text{H}_2\text{O}$
5. $\text{PbS} + 8 \text{HNO}_3 = 3 \text{Pb}(\text{NO}_3)_2 + 2 \text{NO} + \text{S} + 4 \text{H}_2\text{O}$
6. $3 \text{CO} + \text{K}_2\text{Cr}_2\text{O}_7 + \text{H}_2\text{SO}_4 = 3 \text{CO}_2 + \text{Cr}_2(\text{SO}_4)_3 + \text{K}_2\text{SO}_4 + \text{H}_2\text{O}$
7. $\text{K}(\text{OH}) + 3 \text{Cl}_2 = \text{KCl} + \text{KClO}_3 + 3 \text{H}_2\text{O}$
8. $\text{CuSO}_4 \cdot 5\text{H}_2\text{O} + \text{NH}_3 = [\text{Cu}(\text{NH}_3)_4]\text{SO}_4 \cdot \text{H}_2\text{O} + \text{H}_2\text{O}$
9. $\text{C}_3\text{H}_8 + \text{O}_2 = \text{CO}_2 + 4 \text{H}_2\text{O}$
10. $\text{CrI}_3 + 64 \text{KOH} + 27 \text{Cl}_2 = 2 \text{K}_2\text{CrO}_4 + \text{KIO}_4 + 54 \text{KCl} + 32 \text{H}_2\text{O}$
11. $\text{HClO}_4 + \text{P}_4\text{O}_{10} = \text{H}_3\text{PO}_4 + 6 \text{Cl}_2\text{O}_7$
12. $\text{C}_3\text{Cl}_2\text{N}_3\text{NaO}_3 + \text{HCl} = \text{C}_3\text{H}_3\text{N}_3\text{O}_3 + \text{NaCl} + \text{Cl}_2$
13. $\text{V}_2(\text{SO}_4)_5 + 10 \text{Na}_3\text{PO}_4 = \text{V}_3(\text{PO}_4)_5 + 15 \text{Na}_2\text{SO}_4$
14. $\text{S}_1 + \text{Al}_6 = \text{Al}_2\text{S}_3$
15. $2 \text{HSbCl}_4 + \text{H}_2\text{S} = \text{Sb}_2\text{S}_3 + \text{HCl}$
16. $\text{Co}(\text{NO}_3)_3 + 3 (\text{NH}_4)_2\text{S} = \text{Co}_2\text{S}_3 + \text{NH}_4\text{NO}_3$
17. $10 \text{HSiCl}_3 + \text{H}_2\text{O} = \text{H}_{10}\text{Si}_{10}\text{O}_{15} + \text{HCl}$
18. $\text{Cu}(\text{NO}_3)_2(\text{s}) = 2 \text{CuO}(\text{s}) + \text{NO}_2(\text{g}) + \text{O}_2(\text{g})$
19. $\text{Bi}(\text{OH})_3 + 3 \text{SnO}_2\{2-\} = \text{Bi} + 3 \text{H}_2\text{O} + 3 \text{SnO}_3\{2-\}$
20. $6 \text{Cl} + \text{H}_2\text{O} + 6 \text{AgNO}_3 = 5 \text{AgCl} + \text{HNO}_3 + \text{AgClO}_3$



ANSWERS

1. $2 \text{ Al} + 6 \text{ HCl} = 2 \text{ AlCl}_3 + 3 \text{ H}_2$
2. $\text{Mg}_3\text{N}_2(\text{s}) + 6 \text{ H}_2\text{O}(\text{l}) = 3 \text{ Mg}(\text{OH})_2(\text{s}) + 2 \text{ NH}_3(\text{g})$
3. $3 \text{ NaOH} + \text{H}_3\text{PO}_4 = \text{Na}_3\text{PO}_4 + 3 \text{ H}_2\text{O}$
4. $3 \text{ Cu} + 8 \text{ HNO}_3 = 3 \text{ Cu}(\text{NO}_3)_2 + 2 \text{ NO} + 4 \text{ H}_2\text{O}$
5. $3 \text{ PbS} + 8 \text{ HNO}_3 = 3 \text{ Pb}(\text{NO}_3)_2 + 2 \text{ NO} + 3 \text{ S} + 4 \text{ H}_2\text{O}$
6. $3 \text{ CO} + \text{K}_2\text{Cr}_2\text{O}_7 + 4 \text{ H}_2\text{SO}_4 = 3 \text{ CO}_2 + \text{Cr}_2(\text{SO}_4)_3 + \text{K}_2\text{SO}_4 + 4 \text{ H}_2\text{O}$
7. $6 \text{ K}(\text{OH}) + 3 \text{ Cl}_2 = 5 \text{ KCl} + \text{KClO}_3 + 3 \text{ H}_2\text{O}$
8. $\text{CuSO}_4 \cdot 5\text{H}_2\text{O} + 4 \text{ NH}_3 = [\text{Cu}(\text{NH}_3)_4]\text{SO}_4 \cdot \text{H}_2\text{O} + 4 \text{ H}_2\text{O}$
9. $\text{C}_3\text{H}_8 + 5 \text{ O}_2 = 3 \text{ CO}_2 + 4 \text{ H}_2\text{O}$
10. $2 \text{ CrI}_3 + 64 \text{ KOH} + 27 \text{ Cl}_2 = 2 \text{ K}_2\text{CrO}_4 + 6 \text{ KIO}_4 + 54 \text{ KCl} + 32 \text{ H}_2\text{O}$
11. $12 \text{ HClO}_4 + \text{P}_4\text{O}_{10} = 4 \text{ H}_3\text{PO}_4 + 6 \text{ Cl}_2\text{O}_7$
12. $\text{C}_3\text{Cl}_2\text{N}_3\text{NaO}_3 + 3 \text{ HCl} = \text{C}_3\text{H}_3\text{N}_3\text{O}_3 + \text{NaCl} + 2 \text{ Cl}_2$
13. $3 \text{ V}_2(\text{SO}_4)_5 + 10 \text{ Na}_3\text{PO}_4 = 2 \text{ V}_3(\text{PO}_4)_5 + 15 \text{ Na}_2\text{SO}_4$
14. $9 \text{ S}_1 + \text{Al}_6 = 3 \text{ Al}_2\text{S}_3$
15. $2 \text{ HSbCl}_4 + 3 \text{ H}_2\text{S} = \text{Sb}_2\text{S}_3 + 8 \text{ HCl}$
16. $2 \text{ Co}(\text{NO}_3)_3 + 3 (\text{NH}_4)_2\text{S} = \text{Co}_2\text{S}_3 + 6 \text{ NH}_4\text{NO}_3$
17. $10 \text{ HSiCl}_3 + 15 \text{ H}_2\text{O} = \text{H}_{10}\text{Si}_{10}\text{O}_{15} + 30 \text{ HCl}$
18. $2 \text{ Cu}(\text{NO}_3)_2(\text{s}) = 2 \text{ CuO}(\text{s}) + 4 \text{ NO}_2(\text{g}) + \text{O}_2(\text{g})$
19. $2 \text{ Bi}(\text{OH})_3 + 3 \text{ SnO}_2\{2-\} = 2 \text{ Bi} + 3 \text{ H}_2\text{O} + 3 \text{ SnO}_3\{2-\}$
20. $6 \text{ Cl} + 3 \text{ H}_2\text{O} + 6 \text{ AgNO}_3 = 5 \text{ AgCl} + 6 \text{ HNO}_3 + \text{AgClO}_3$



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