



BALANCE THE GIVEN CHEMICAL EQUATIONS

Worksheet - 32

1. $\text{FeCl}_2 + \text{KMnO}_4 + 8 \text{HCl} = 5 \text{FeCl}_3 + \text{MnCl}_2 + \text{H}_2\text{O} + \text{KCl}$
2. $2 (\text{CH}_3)_2\text{N}_2\text{H}_4 + \text{N}_2\text{O}_4 = \text{N}_2 + \text{H}_2\text{O} + 4 \text{CO}_2$
3. $\text{Si}_4\text{H}_{10} + 13 \text{O}_2 = \text{SiO}_2 + 10 \text{H}_2\text{O}$
4. $3 \text{H}_2\text{CO}_3 + \text{Al}(\text{OH})_3 = \text{Al}_2(\text{CO}_3)_3 + \text{H}_2\text{O}$
5. $\text{I}_2 + \text{Na}_2\text{S}_2\text{O}_3 = \text{NaI} + \text{Na}_2\text{S}_4\text{O}_6$
6. $\text{P}_2\text{O}_5 + \text{H}_2\text{O} = \text{H}_3\text{PO}_4$
7. $\text{FeCl}_2(\text{aq}) + \text{KMnO}_4(\text{aq}) + 8 \text{HCl}(\text{aq}) = \text{FeCl}_3(\text{aq}) + \text{MnCl}_2(\text{aq}) + 4 \text{H}_2\text{O}(\text{l}) + \text{KCl}(\text{aq})$
8. $\text{HI} + \text{H}_2\text{SO}_4 = \text{H}_2\text{SO}_3 + \text{I}_2 + \text{H}_2\text{O}$
9. $\text{F}_2 + \text{NaCl} = \text{Cl}_2 + \text{NaF}$
10. $\text{LiHCO}_3 + \text{H}_2\text{SO}_4 = \text{Li}_2\text{SO}_4 + 2 \text{H}_2\text{O} + 2 \text{CO}_2$
11. $7 \text{P}_4 + 12 \text{NaOH} + \text{H}_2\text{O} = 16 \text{PH}_3 + \text{NaHPO}_3$
12. $\text{Cr}_2\text{O}_7^{2-} + \text{H}^{+} + 6 \text{Cl}^{-} = 2 \text{Cr}^{3+} + \text{H}_2\text{O} + 3 \text{Cl}_2$
13. $\text{Al}_2\text{O}_3 + \text{H}_2\text{SO}_4 = \text{Al}_2(\text{SO}_4)_3 + \text{H}_2\text{O}$
14. $\text{Bi}_2\text{O}_3 + \text{C} = 2 \text{Bi} + \text{CO}$
15. $3 \text{Cr}(\text{NO}_3)_2 + \text{Al} = 2 \text{Al}(\text{NO}_3)_3 + \text{Cr}$
16. $\text{TeO}_2 + \text{CsOH} = \text{Cs}_2\text{TeO}_3 + \text{H}_2\text{O}$
17. $2 (\text{CH}_3(\text{CH}_2)_2\text{CH}_3) + \text{O}_2 = 8 \text{CO}_2 + 10 \text{H}_2\text{O}$
18. $\text{H}_3\text{PO}_4 + \text{KOH} = \text{K}_3\text{PO}_4 + \text{H}_2\text{O}$
19. $\text{Li}_3\text{N} + \text{H}_2\text{O} = \text{LiOH} + \text{NH}_3$
20. $2 \text{I}_2 + \text{IO}_3^{-} + \text{H}^{+} + 10 \text{Cl}^{-} = 5 \text{ICl}_2^{-} + \text{H}_2\text{O}$



ANSWERS

1. $5 \text{ FeCl}_2 + \text{KMnO}_4 + 8 \text{ HCl} = 5 \text{ FeCl}_3 + \text{MnCl}_2 + 4 \text{ H}_2\text{O} + \text{KCl}$
2. $2 (\text{CH}_3)_2\text{N}_2\text{H}_4 + 2 \text{ N}_2\text{O}_4 = 4 \text{ N}_2 + \text{H}_2\text{O} + 4 \text{ CO}_2$
3. $2 \text{ Si}_4\text{H}_{10} + 13 \text{ O}_2 = 8 \text{ SiO}_2 + 10 \text{ H}_2\text{O}$
4. $3 \text{ H}_2\text{CO}_3 + 2 \text{ Al}(\text{OH})_3 = \text{Al}_2(\text{CO}_3)_3 + 6 \text{ H}_2\text{O}$
5. $\text{I}_2 + 2 \text{ Na}_2\text{S}_2\text{O}_3 = 2 \text{ NaI} + \text{Na}_2\text{S}_4\text{O}_6$
6. $\text{P}_2\text{O}_5 + 3 \text{ H}_2\text{O} = 2 \text{ H}_3\text{PO}_4$
7. $5 \text{ FeCl}_2(\text{aq}) + \text{KMnO}_4(\text{aq}) + 8 \text{ HCl}(\text{aq}) = 5 \text{ FeCl}_3(\text{aq}) + \text{MnCl}_2(\text{aq}) + 4 \text{ H}_2\text{O}(\text{l}) + \text{KCl}(\text{aq})$
8. $2 \text{ HI} + \text{H}_2\text{SO}_4 = \text{H}_2\text{SO}_3 + \text{I}_2 + \text{H}_2\text{O}$
9. $\text{F}_2 + 2 \text{ NaCl} = \text{Cl}_2 + 2 \text{ NaF}$
10. $2 \text{ LiHCO}_3 + \text{H}_2\text{SO}_4 = \text{Li}_2\text{SO}_4 + 2 \text{ H}_2\text{O} + 2 \text{ CO}_2$
11. $7 \text{ P}_4 + 12 \text{ NaOH} + 24 \text{ H}_2\text{O} = 16 \text{ PH}_3 + 12 \text{ NaHPO}_3$
12. $\text{Cr}_2\text{O}_7^{2-} + 14 \text{ H}^{+} + 6 \text{ Cl}^{-} = 2 \text{ Cr}^{3+} + 7 \text{ H}_2\text{O} + 3 \text{ Cl}_2$
13. $\text{Al}_2\text{O}_3 + 3 \text{ H}_2\text{SO}_4 = \text{Al}_2(\text{SO}_4)_3 + 3 \text{ H}_2\text{O}$
14. $\text{Bi}_2\text{O}_3 + 3 \text{ C} = 2 \text{ Bi} + 3 \text{ CO}$
15. $3 \text{ Cr}(\text{NO}_3)_2 + 2 \text{ Al} = 2 \text{ Al}(\text{NO}_3)_3 + 3 \text{ Cr}$
16. $\text{TeO}_2 + 2 \text{ CsOH} = \text{Cs}_2\text{TeO}_3 + \text{H}_2\text{O}$
17. $2 (\text{CH}_3(\text{CH}_2)_2\text{CH}_3) + 13 \text{ O}_2 = 8 \text{ CO}_2 + 10 \text{ H}_2\text{O}$
18. $\text{H}_3\text{PO}_4 + 3 \text{ KOH} = \text{K}_3\text{PO}_4 + 3 \text{ H}_2\text{O}$
19. $\text{Li}_3\text{N} + 3 \text{ H}_2\text{O} = 3 \text{ LiOH} + \text{NH}_3$
20. $2 \text{ I}_2 + \text{IO}_3^{-} + 6 \text{ H}^{+} + 10 \text{ Cl}^{-} = 5 \text{ ICl}_2^{-} + 3 \text{ H}_2\text{O}$



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