



BALANCE THE GIVEN CHEMICAL EQUATIONS

Worksheet - 24

1. $4 \text{ Br}_2 + \text{H}_2\text{S} + \text{ ___ } \text{ H}_2\text{O} = \text{H}_2\text{SO}_4 + \text{ ___ } \text{ HBr}$
2. $\text{ ___ } \text{ KMnO}_4 + 16 \text{ HCl} = \text{ ___ } \text{ KCl} + 2 \text{ MnCl}_2 + 8 \text{ H}_2\text{O} + 5 \text{ Cl}_2$
3. $13 \text{ KClO}_3(\text{s}) + \text{ ___ } \text{ C}_6\text{H}_{14}\text{O}_6(\text{s}) = 13 \text{ KCl}(\text{s}) + 18 \text{ CO}_2(\text{g}) + \text{ ___ } \text{ H}_2\text{O}(\text{l})$
4. $2 \text{ O}_3 = \text{ ___ } \text{ O}_2$
5. $\text{ ___ } \text{ H}_2\text{O}_2 + \text{I}_2 = \text{ ___ } \text{ H}_2\text{O} + 2 \text{ HIO}_3$
6. $\text{V}(\text{OH})_4\text{Cl} + \text{FeCl}_2 + \text{ ___ } \text{ HCl} = \text{VOCl}_2 + \text{FeCl}_3 + \text{ ___ } \text{ H}_2\text{O}$
7. $\text{ ___ } \text{ KOH} + 3 \text{ Cl}_2 = \text{ ___ } \text{ KCl} + \text{KClO}_3 + 3 \text{ H}_2\text{O}$
8. $\text{ ___ } \text{ HNO}_3(\text{aq}) + \text{Al}(\text{OH})_3(\text{s}) = \text{ ___ } \text{ H}_2\text{O}(\text{l}) + \text{Al}(\text{NO}_3)_3(\text{aq})$
9. $2 \text{ H}_3\text{PO}_4 + \text{ ___ } \text{ Mg}(\text{OH})_2 = \text{Mg}_3(\text{PO}_4)_2 + \text{ ___ } \text{ H}_2\text{O}$
10. $(\text{CH}_3(\text{CH}_2)\text{CH}_3) + \text{ ___ } \text{ O}_2 = 3 \text{ CO}_2 + 4 \text{ H}_2\text{O}$
11. $6 \text{ CO}_2 + \text{ ___ } \text{ H}_2\text{O} = \text{C}_6\text{H}_{12}\text{O}_6 + \text{ ___ } \text{ O}_2$
12. $\text{Au}_2\text{S}_3 + 3 \text{ H}_2 = \text{ ___ } \text{ Au} + 3 \text{ H}_2\text{S}$
13. $\text{Na}_2\text{CO}_3 + \text{Ca}(\text{OH})_2 = \text{ ___ } \text{ NaOH} + \text{CaCO}_3$
14. $2 \text{ Al} + \text{ ___ } \text{ H}_2\text{SO}_4 = \text{Al}_2(\text{SO}_4)_3 + \text{ ___ } \text{ H}_2$
15. $\text{Ba}(\text{OH})_2 \cdot 8\text{H}_2\text{O} + \text{ ___ } \text{ NH}_4\text{SCN} = \text{Ba}(\text{SCN})_2 + 10 \text{ H}_2\text{O} + \text{ ___ } \text{ NH}_3$
16. $4 \text{ Li} + \text{O}_2 = \text{ ___ } \text{ Li}_2\text{O}$
17. $4 \text{ Au} + \text{ ___ } \text{ NaCN} + \text{O}_2 + 2 \text{ H}_2\text{O} = \text{ ___ } \text{ NaAu}(\text{CN})_2 + 4 \text{ NaOH}$
18. $2 \text{ H}_3\text{PO}_4 + \text{ ___ } \text{ Mg}(\text{OH})_2 = \text{Mg}_3(\text{PO}_4)_2 + 6 \text{ H}_2\text{O}$
19. $4 \text{ Au} + 8 \text{ NaCN} + \text{O}_2 + \text{ ___ } \text{ H}_2\text{O} = 4 \text{ NaAu}(\text{CN})_2 + \text{ ___ } \text{ NaOH}$
20. $\text{Al}(\text{OH})_3 + \text{ ___ } \text{ HCl} = \text{AlCl}_3 + \text{ ___ } \text{ H}_2\text{O}$



ANSWERS

1. $4 \text{ Br}_2 + \text{H}_2\text{S} + 4 \text{ H}_2\text{O} = \text{H}_2\text{SO}_4 + 8 \text{ HBr}$
2. $2 \text{ KMnO}_4 + 16 \text{ HCl} = 2 \text{ KCl} + 2 \text{ MnCl}_2 + 8 \text{ H}_2\text{O} + 5 \text{ Cl}_2$
3. $13 \text{ KClO}_3(\text{s}) + 3 \text{ C}_6\text{H}_{14}\text{O}_6(\text{s}) = 13 \text{ KCl}(\text{s}) + 18 \text{ CO}_2(\text{g}) + 21 \text{ H}_2\text{O}(\text{l})$
4. $2 \text{ O}_3 = 3 \text{ O}_2$
5. $5 \text{ H}_2\text{O}_2 + \text{I}_2 = 4 \text{ H}_2\text{O} + 2 \text{ HIO}_3$
6. $\text{V}(\text{OH})_4\text{Cl} + \text{FeCl}_2 + 2 \text{ HCl} = \text{VOCl}_2 + \text{FeCl}_3 + 3 \text{ H}_2\text{O}$
7. $6 \text{ KOH} + 3 \text{ Cl}_2 = 5 \text{ KCl} + \text{KClO}_3 + 3 \text{ H}_2\text{O}$
8. $3 \text{ HNO}_3(\text{aq}) + \text{Al}(\text{OH})_3(\text{s}) = 3 \text{ H}_2\text{O}(\text{l}) + \text{Al}(\text{NO}_3)_3(\text{aq})$
9. $2 \text{ H}_3\text{PO}_4 + 3 \text{ Mg}(\text{OH})_2 = \text{Mg}_3(\text{PO}_4)_2 + 6 \text{ H}_2\text{O}$
10. $(\text{CH}_3(\text{CH}_2)\text{CH}_3) + 5 \text{ O}_2 = 3 \text{ CO}_2 + 4 \text{ H}_2\text{O}$
11. $6 \text{ CO}_2 + 6 \text{ H}_2\text{O} = \text{C}_6\text{H}_{12}\text{O}_6 + 6 \text{ O}_2$
12. $\text{Au}_2\text{S}_3 + 3 \text{ H}_2 = 2 \text{ Au} + 3 \text{ H}_2\text{S}$
13. $\text{Na}_2\text{CO}_3 + \text{Ca}(\text{OH})_2 = 2 \text{ NaOH} + \text{CaCO}_3$
14. $2 \text{ Al} + 3 \text{ H}_2\text{SO}_4 = \text{Al}_2(\text{SO}_4)_3 + 3 \text{ H}_2$
15. $\text{Ba}(\text{OH})_2 \cdot 8\text{H}_2\text{O} + 2 \text{ NH}_4\text{SCN} = \text{Ba}(\text{SCN})_2 + 10 \text{ H}_2\text{O} + 2 \text{ NH}_3$
16. $4 \text{ Li} + \text{O}_2 = 2 \text{ Li}_2\text{O}$
17. $4 \text{ Au} + 8 \text{ NaCN} + \text{O}_2 + 2 \text{ H}_2\text{O} = 4 \text{ NaAu}(\text{CN})_2 + 4 \text{ NaOH}$
18. $2 \text{ H}_3\text{PO}_4 + 3 \text{ Mg}(\text{OH})_2 = \text{Mg}_3(\text{PO}_4)_2 + 6 \text{ H}_2\text{O}$
19. $4 \text{ Au} + 8 \text{ NaCN} + \text{O}_2 + 2 \text{ H}_2\text{O} = 4 \text{ NaAu}(\text{CN})_2 + 4 \text{ NaOH}$
20. $\text{Al}(\text{OH})_3 + 3 \text{ HCl} = \text{AlCl}_3 + 3 \text{ H}_2\text{O}$



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