



## BALANCE THE GIVEN CHEMICAL EQUATIONS

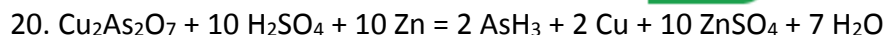
### Worksheet - 28

1.  $\text{ZnS} + 3 \text{O}_2 = 2 \text{ZnO} + 2 \text{SO}_2$
2.  $\text{Cu} + \text{HNO}_3 = \text{Cu}(\text{NO}_3)_2 + 2 \text{H}_2\text{O} + 2 \text{NO}_2$
3.  $4 \text{Al}_3 + \text{O}_2 = \text{Al}_2\text{O}_3$
4.  $\text{Cr}_2\text{O}_7^{2-} + \text{Fe}^{2+} + 14 \text{H}^+ = 2 \text{Cr}^{3+} + \text{Fe}^{3+} + 7 \text{H}_2\text{O}$
5.  $20 \text{KMnO}_4 + \text{Na}_2\text{SO}_3 + \text{H}_2\text{O} = 20 \text{MnO}_2 + \text{Na}_2\text{SO}_4 + 20 \text{KOH}$
6.  $6 \text{CrCl}_3 \cdot 6 \text{H}_2\text{O} + (\text{NH}_2)_2\text{CONH}_2 + 19 \text{CH}_3\text{COCH}_2\text{COCH}_3 = 6 \text{Cr}(\text{CH}_3\text{COCH}_2\text{COCH}_3)_3 + 18 \text{NH}_4\text{Cl} + \text{CO}_2 + 22 \text{H}_2\text{O}$
7.  $\text{NaF} + \text{Mg}(\text{OH})_2 = \text{MgF}_2 + \text{NaOH}$
8.  $2 \text{HClO} + \text{Ba}(\text{OH})_2 = \text{Ba}(\text{ClO})_2 + \text{H}_2\text{O}$
9.  $\text{Ca} + 10 (\text{NH}_4)_2\text{CO}_3 = 10 \text{CaCO}_3 + \text{NH}_3 + \text{H}_2\text{O}$
10.  $\text{Pb}_3\text{O}_4 + 4 \text{HNO}_3 = \text{Pb}(\text{NO}_3)_2 + \text{PbO}_2 + 2 \text{H}_2\text{O}$
11.  $4 \text{H}_2\text{CO} + \text{NaBH}_4 + \text{H}_2\text{O} = 4 \text{H}_3\text{COH} + \text{NaB}(\text{OH})_4$
12.  $2 \text{Pb}(\text{NO}_3)_2 = \text{PbO} + 4 \text{NO}_2 + \text{O}_2$
13.  $2 (\text{NH}_4)_3\text{PO}_4 + \text{CaCl}_2 = \text{Ca}_3(\text{PO}_4)_2 + 6 \text{NH}_4\text{Cl}$
14.  $2 \text{CuO}(\text{s}) + \text{C}(\text{s}) = \text{Cu}(\text{s}) + \text{CO}_2(\text{g})$
15.  $\text{H}_2\text{C}_2\text{O}_4 + 2 \text{KMnO}_4 = \text{CO}_2 + 2 \text{MnO} + \text{K}_2\text{O} + 5 \text{H}_2\text{O}$
16.  $\text{C}_5\text{H}_{11}\text{OH} + 2 \text{KMnO}_4 + 3 \text{H}_2\text{SO}_4 = 5 \text{C}_5\text{H}_{12}\text{O}_2 + \text{K}_2\text{SO}_4 + \text{MnSO}_4 + 3 \text{H}_2\text{O}$
17.  $\text{Br}_2 + \text{NaOH} = \text{NaBr} + \text{NaOBr} + \text{H}_2\text{O}$
18.  $7 \text{PH}_3 + 8 \text{KMnO}_4 + \text{H}_2\text{SO}_4 = 4 \text{K}_2\text{SO}_4 + 8 \text{Mn} + 7 \text{H}_3\text{PO}_4 + \text{H}_2\text{O}$
19.  $5 \text{KBiO}_3 + \text{Mn}(\text{NO}_3)_2 + 14 \text{HNO}_3 = 2 \text{KMnO}_4 + 5 \text{Bi}(\text{NO}_3)_3 + \text{KNO}_3 + 7 \text{H}_2\text{O}$
20.  $\text{Cu}_2\text{As}_2\text{O}_7 + \text{H}_2\text{SO}_4 + 10 \text{Zn} = \text{AsH}_3 + 2 \text{Cu} + 10 \text{ZnSO}_4 + 7 \text{H}_2\text{O}$



# ANSWERS

1.  $2 \text{ZnS} + 3 \text{O}_2 = 2 \text{ZnO} + 2 \text{SO}_2$
2.  $\text{Cu} + 4 \text{HNO}_3 = \text{Cu}(\text{NO}_3)_2 + 2 \text{H}_2\text{O} + 2 \text{NO}_2$
3.  $4 \text{Al}_3 + 9 \text{O}_2 = 6 \text{Al}_2\text{O}_3$
4.  $\text{Cr}_2\text{O}_7^{2-} + 10 \text{Fe}^{2+} + 14 \text{H}^+ = 2 \text{Cr}^{3+} + 10 \text{Fe}^{3+} + 7 \text{H}_2\text{O}$
5.  $20 \text{KMnO}_4 + 20 \text{Na}_2\text{SO}_3 + \text{H}_2\text{O} = 20 \text{MnO}_2 + 20 \text{Na}_2\text{SO}_4 + 20 \text{KOH}$
6.  $6 \text{CrCl}_3 + 6 \text{H}_2\text{O} + 6 (\text{NH}_2)_2\text{CONH}_2 + 19 \text{CH}_3\text{COCH}_2\text{COCH}_3 = 6 \text{Cr}(\text{CH}_3\text{COCH}_2\text{COCH}_3)_3 + 18 \text{NH}_4\text{Cl} + 11 \text{CO}_2 + 22 \text{H}_2\text{O}$
7.  $2 \text{NaF} + \text{Mg}(\text{OH})_2 = \text{MgF}_2 + 2 \text{NaOH}$
8.  $2 \text{HClO} + \text{Ba}(\text{OH})_2 = \text{Ba}(\text{ClO})_2 + 2 \text{H}_2\text{O}$
9.  $10 \text{Ca} + 10 (\text{NH}_4)_2\text{CO}_3 = 10 \text{CaCO}_3 + 20 \text{NH}_3 + \text{H}_2\text{O}$
10.  $\text{Pb}_3\text{O}_4 + 4 \text{HNO}_3 = 2 \text{Pb}(\text{NO}_3)_2 + \text{PbO}_2 + 2 \text{H}_2\text{O}$
11.  $4 \text{H}_2\text{CO} + \text{NaBH}_4 + 4 \text{H}_2\text{O} = 4 \text{H}_3\text{COH} + \text{NaB}(\text{OH})_4$
12.  $2 \text{Pb}(\text{NO}_3)_2 = 2 \text{PbO} + 4 \text{NO}_2 + \text{O}_2$
13.  $2 (\text{NH}_4)_3\text{PO}_4 + 3 \text{CaCl}_2 = \text{Ca}_3(\text{PO}_4)_2 + 6 \text{NH}_4\text{Cl}$
14.  $2 \text{CuO}(\text{s}) + \text{C}(\text{s}) = 2 \text{Cu}(\text{s}) + \text{CO}_2(\text{g})$
15.  $5 \text{H}_2\text{C}_2\text{O}_4 + 2 \text{KMnO}_4 = 10 \text{CO}_2 + 2 \text{MnO} + \text{K}_2\text{O} + 5 \text{H}_2\text{O}$
16.  $5 \text{C}_5\text{H}_{11}\text{OH} + 2 \text{KMnO}_4 + 3 \text{H}_2\text{SO}_4 = 5 \text{C}_5\text{H}_{12}\text{O}_2 + \text{K}_2\text{SO}_4 + 2 \text{MnSO}_4 + 3 \text{H}_2\text{O}$
17.  $\text{Br}_2 + 2 \text{NaOH} = \text{NaBr} + \text{NaOBr} + \text{H}_2\text{O}$
18.  $7 \text{PH}_3 + 8 \text{KMnO}_4 + 4 \text{H}_2\text{SO}_4 = 4 \text{K}_2\text{SO}_4 + 8 \text{Mn} + 7 \text{H}_3\text{PO}_4 + 4 \text{H}_2\text{O}$
19.  $5 \text{KBiO}_3 + 2 \text{Mn}(\text{NO}_3)_2 + 14 \text{HNO}_3 = 2 \text{KMnO}_4 + 5 \text{Bi}(\text{NO}_3)_3 + 3 \text{KNO}_3 + 7 \text{H}_2\text{O}$



Thanks for downloading our free printable.

We have thousands of such resources in our blog for teachers and parents.

**[You can download them for free here!](#)**

### **Free Printables from Go Science Girls – Fair Usage Policy**

#### **You can ...**

- Download and save this free printable from [gosciencegirls.com](http://gosciencegirls.com) to your computer.
- Print this file and use it as many times as you want in your home, classrooms or for your library.
- Feel free to link our blog post where your visitors can find and download this printable for free.
- When you post online about this resource – please give due credit to [gosciencegirls.com](http://gosciencegirls.com)

#### **You Cannot ...**

- Access this file or download it from other sites apart from [gosciencegirls.com](http://gosciencegirls.com)
- Other websites cannot link to this pdf directly. If required, they are welcomed to link to the blog post from where this pdf can be downloaded.
- The ownership of this pdf rests with GoScienceGirls. No one can claim ownership for this file.
- You are not allowed to sell printed copies of this file to others.
- You are not allowed to store this file electronically and redistribute it (only personal use is allowed).

### **Further Questions?**

Feel free to email us at [contactgosciencegirls@gmail.com](mailto:contactgosciencegirls@gmail.com) for any further questions and suggestions. We would love to hear from you. We promise to respond back as soon as we can.