

Now try your hand at balancing these equations:

- |     |                                |                           |     |                                 |                         |
|-----|--------------------------------|---------------------------|-----|---------------------------------|-------------------------|
| 11) | $\text{Al} + \text{S} \ggg$    | $\text{Al}_2\text{S}_3$   | 12) | $\text{Ag} + \text{I}_2 \gggg$  | $\text{AgI}$            |
| 13) | $\text{Zn} + \text{O}_2 \ggg$  | $\text{ZnO}$              | 14) | $\text{Pb} + \text{O}_2 \gggg$  | $\text{PbO}$            |
| 15) | $\text{Mg} + \text{Cl}_2 \ggg$ | $\text{MgCl}_2$           | 16) | $\text{Al} + \text{Br}_2 \gggg$ | $\text{AlBr}_3$         |
| 17) | $\text{Al} + \text{O}_2 \ggg$  | $\text{Al}_2\text{O}_3$   | 18) | $\text{Fe} + \text{F}_2 \gggg$  | $\text{FeF}_2$          |
| 19) | $\text{P} + \text{O}_2 \ggg$   | $\text{P}_4\text{O}_{10}$ | 20) | $\text{Sn} + \text{O}_2 \gggg$  | $\text{SnO}$            |
| 21) | $\text{Bi} + \text{Cl}_2 \ggg$ | $\text{BiCl}_3$           | 22) | $\text{Sb} + \text{S} \gggg$    | $\text{Sb}_2\text{S}_3$ |
| 23) | $\text{H}_2 + \text{N}_2 \ggg$ | $\text{NH}_3$             | 24) | $\text{Ca} + \text{O}_2 \gggg$  | $\text{CaO}$            |
| 25) | $\text{Cu} + \text{O}_2 \ggg$  | $\text{Cu}_2\text{O}$     | 26) | $\text{Ba} + \text{O}_2 \gggg$  | $\text{BaO}$            |
| 27) | $\text{Sn} + \text{Cl}_2 \ggg$ | $\text{SnCl}_4$           | 28) | $\text{Mg} + \text{P} \gggg$    | $\text{Mg}_3\text{P}_2$ |
| 29) | $\text{Na} + \text{S} \ggg$    | $\text{Na}_2\text{S}$     | 30) | $\text{K} + \text{N}_2 \gggg$   | $\text{K}_3\text{N}$    |

These next are different because they have more than one product on the right hand side. The same rules still apply: there must be an equal number of each type of atom on both sides.

- |     |                            |                              |                                |                          |
|-----|----------------------------|------------------------------|--------------------------------|--------------------------|
| 31) | $\text{Zn} +$              | $\text{HCl} \ggg$            | $\text{ZnCl}_2 +$              | $\text{H}_2$             |
| 32) | $\text{Al} +$              | $\text{HCl} \ggg$            | $\text{AlCl}_3 +$              | $\text{H}_2$             |
| 33) | $\text{Cl}_2 +$            | $\text{AlI}_3 \ggg$          | $\text{AlCl}_3 +$              | $\text{I}_2$             |
| 34) | $\text{Br}_2 +$            | $\text{CuI} \ggg$            | $\text{CuBr} +$                | $\text{I}_2$             |
| 35) | $\text{Na}_2\text{CO}_3 +$ | $\text{CaCl}_2 \ggg$         | $\text{CaCO}_3 +$              | $\text{NaCl}$            |
| 36) | $\text{Cu} +$              | $\text{AgNO}_3 \gggg$        | $\text{Cu}(\text{NO}_3)_2 +$   | $\text{Ag}$              |
| 37) | $\text{Mg}(\text{OH})_2 +$ | $\text{H}_2\text{SO}_4 \ggg$ | $\text{Mg}_2\text{SO}_4 +$     | $\text{H}_2\text{O}$     |
| 38) | $\text{NaOH} +$            | $\text{CuSO}_4 \ggg$         | $\text{Na}_2\text{SO}_4 +$     | $\text{Cu}(\text{OH})_2$ |
| 39) | $\text{NH}_4\text{OH} +$   | $\text{FeCl}_3 \ggg$         | $\text{NH}_4\text{Cl} +$       | $\text{Fe}(\text{OH})_3$ |
| 40) | $\text{Mg} +$              | $\text{H}_3\text{PO}_4 \ggg$ | $\text{Mg}_3(\text{PO}_4)_2 +$ | $\text{H}_2$             |