

Exercise 6a

Balancing equations

Balance the following equations. To get you started indicates the first six questions where numbers need to be inserted to achieve the balance. In one or two difficult examples some of the numbers have been added. You will not need to change these. Also remember all the formulae are correct!

- 1 $\underline{2}\text{H}_2 + \text{O}_2 \rightarrow \underline{2}\text{H}_2\text{O}$
- 2 $\text{BaCl}_2 + \underline{2}\text{NaOH} \rightarrow \text{Ba(OH)}_2 + \underline{2}\text{NaCl}$
- 3 $\text{H}_2\text{SO}_4 + \underline{2}\text{KOH} \rightarrow \text{K}_2\text{SO}_4 + \underline{2}\text{H}_2\text{O}$
- 4 $\text{K}_2\text{CO}_3 + \underline{2}\text{HCl} \rightarrow \underline{2}\text{KCl} + \text{H}_2\text{O} + \text{CO}_2$
- 5 $\text{CaCO}_3 + \underline{2}\text{HNO}_3 \rightarrow \text{Ca(NO}_3)_2 + \text{H}_2\text{O} + \text{CO}_2$
- 6 $\text{Ca} + \underline{2}\text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2 + \text{H}_2$
- 7 $\text{Pb(NO}_3)_2 + \underline{2}\text{NaI} \rightarrow \text{PbI}_2 + \underline{2}\text{NaNO}_3$
- 8 $\text{Al}_2(\text{SO}_4)_3 + \underline{6}\text{NaOH} \rightarrow \underline{2}\text{Al(OH)}_3 + \underline{3}\text{Na}_2\text{SO}_4$
- 9 $\text{Al(OH)}_3 + \text{NaOH} \rightarrow \text{NaAlO}_2 + \underline{2}\text{H}_2\text{O}$
- 10 $\underline{2}\text{Pb(NO}_3)_2 \rightarrow \underline{2}\text{PbO} + \underline{4}\text{NO}_2 + \text{O}_2$
- 11 $\underline{2}\text{FeSO}_4 \rightarrow \text{Fe}_2\text{O}_3 + \text{SO}_2 + \text{SO}_3$
- 12 $\text{NH}_4\text{NO}_3 \rightarrow \text{N}_2\text{O} + \underline{2}\text{H}_2\text{O}$
- 13 $\underline{2}\text{NaNO}_3 \rightarrow \underline{2}\text{NaNO}_2 + \text{O}_2$
- 14 $\text{CH}_4 + \underline{2}\text{O}_2 \rightarrow \text{CO}_2 + \underline{2}\text{H}_2\text{O}$
- 15 $\underline{2}\text{C}_4\text{H}_{10} + \underline{13}\text{O}_2 \rightarrow \underline{8}\text{CO}_2 + \underline{10}\text{H}_2\text{O}$
- 16 $\text{PCl}_3 + \underline{3}\text{H}_2\text{O} \rightarrow \text{H}_3\text{PO}_3 + \underline{3}\text{HCl}$
- 17 $\underline{8}\text{HNO}_3 + \underline{3}\text{Cu} \rightarrow \underline{3}\text{Cu(NO}_3)_2 + \underline{2}\text{NO} + \underline{4}\text{H}_2\text{O}$
- 18 $\underline{4}\text{HNO}_3 + \text{Cu} \rightarrow \text{Cu(NO}_3)_2 + \underline{2}\text{NO}_2 + \underline{2}\text{H}_2\text{O}$
- 19 $\text{H}_3\text{PO}_4 + \text{NaOH} \rightarrow \text{NaH}_2\text{PO}_4 + \text{H}_2\text{O}$
- 20 $\text{H}_3\text{PO}_4 + \underline{3}\text{NaOH} \rightarrow \text{Na}_3\text{PO}_4 + \underline{3}\text{H}_2\text{O}$