



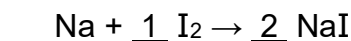
Balancing Chemical Equations 1

When we balance chemical equations, we are trying to figure out how many molecules of each type participate in the reaction. Because we know we are dealing with the particular compounds in the reaction **we may not change any of the subscripts in the formulas for the chemicals**. The subscripts tell us how many of each atom are in the molecule, and changing the make-up of the molecule changes the chemicals.

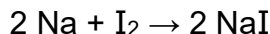
Example 1: Balance the following reaction: $__ \text{Na} + __ \text{I}_2 \rightarrow __ \text{NaI}$

Solution: Since the sodium occurs as a single atom on the left side of the equation, it will be easy to balance sodium. We should start with iodine.

We can copy the subscripts on the iodine on each side of the equation to the coefficient on the other side of the equation, like this:

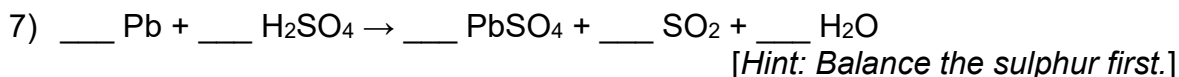


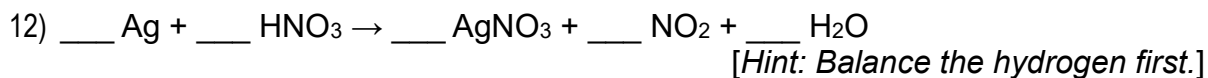
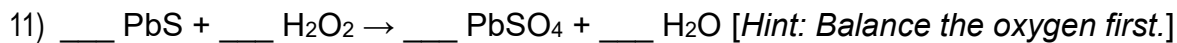
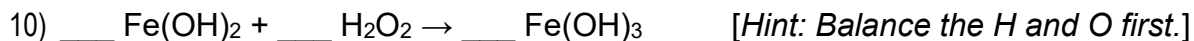
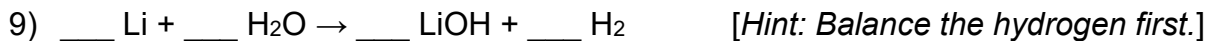
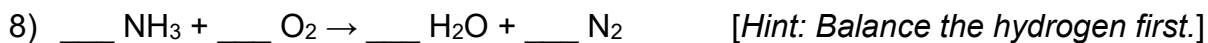
Now there are two iodine atoms on each side of the equation. Iodine is balanced. Now we need to balance sodium. There are two sodium atoms on the right, so we write a 2 as a coefficient to balance sodium (and we can remove the coefficient of 1 in front of iodine):



EXERCISES

Balance the following equations by writing in coefficients in front of the molecules.





SOLUTIONS

