

HW14 How to balance a chemical equation.

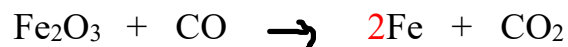
You can use some rules, but remember there are a few exceptions to the rules.

1. Begin by balancing one element at a time.
2. First balance elements that appear only once on each side of the equation. Balance multi-element compounds like KCl before balancing single-element terms like Cl₂. Balance H and O atoms last.
3. At the end check the number of all atoms. The numbers on the left should be equal to the numbers to the right for the same elements.

Examples:



First add a coefficient to balance iron



Carbon is already balanced. We have to balance oxygen.



Check the balance: we have 2 Fe, 3 C, and 6 O atoms on both sides.



Putting a coefficient 4 with water will balance hydrogen. Inserting a 3 with carbon dioxide (CO₂) will balance carbon



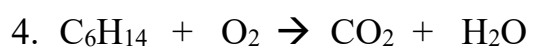
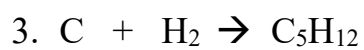
Now we have 10 oxygen atoms on the right, so we need a 5 with O₂



Now we have 3 C, 8 H, and 10 O on both sides.

Questions

I. Balance the following equations:



II. Write down compounds where oxygen has oxidation number:

a) **+2**

b) **+1**

c) **-1**