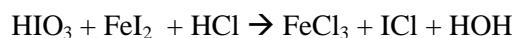


# Redox reaction practice

**Predict the products and balance the following redox reactions. The unbalanced answers are provided on the next page for you to reference your prediction ability.**

1. A solution of tin(II) chloride is added to an acidified solution of potassium permanganate
2. A solution of potassium iodide is added to an acidified solution of potassium dichromate
3. Hydrogen peroxide solution is added to a solution of iron(II) sulfate
4. Potassium permanganate solution is added to concentrated hydrochloric acid.
5. Potassium dichromate solution is added to an acidified solution of sodium sulfite.
6. Solution of potassium iodide, potassium iodate, and dilute sulfuric acid are mixed.
7. Manganese(IV) oxide is added to warm concentrated hydrobromic acid.
8. Chlorine gas is bubbled into cold dilute sodium hydroxide
9. Hydrogen peroxide solution is added to acidified potassium iodide solution
10. Hydrogen peroxide is added to an acidified solution of sodium nitrite
11. Sulfur dioxide gas is bubbled through an acidified solution of potassium permanganate
12. A solution of tin(II) ions is added to an acidified solution of potassium dichromate.

**If you are up for a challenge, here is the daughter of all equations:**



**The son of all equations:**



**Father of all equations**



**Mother of all equations**



Unbalanced answers to the reactions above... (use to check before you balance)

1.  $\text{Sn}^{2+} + \text{H}^+ + \text{MnO}_4^- \rightarrow \text{Sn}^{4+} + \text{Mn}^{2+} + \text{H}_2\text{O}$
2.  $\text{I}^- + \text{H}^+ + \text{Cr}_2\text{O}_7^{2-} \rightarrow \text{Cr}^{3+} + \text{I}_2 + \text{H}_2\text{O}$
3.  $\text{H}_2\text{O}_2 + \text{Fe}^{2+} \rightarrow \text{Fe}^{3+} + \text{H}_2\text{O} + \text{O}_2$
4.  $\text{MnO}_4^- + \text{H}^+ + \text{Cl}^- \rightarrow \text{Mn}^{2+} + \text{Cl}_2 + \text{H}_2\text{O}$
5.  $\text{Cr}_2\text{O}_7^{2-} + \text{H}^+ + \text{SO}_3^{2-} \rightarrow \text{Cr}^{3+} + \text{SO}_4^{2-} + \text{H}_2\text{O}$
6.  $\text{I}^- + \text{H}^+ + \text{IO}_3^- \rightarrow \text{I}_2 + \text{H}_2\text{O}$
7.  $\text{MnO}_2 + \text{H}^+ + \text{Br}^- \rightarrow \text{Mn}^{2+} + \text{Br}_2 + \text{H}_2\text{O}$
8.  $\text{Cl}_2 + \text{OH}^- \rightarrow \text{Cl}^- + \text{ClO}^- + \text{H}_2\text{O}$
9.  $\text{H}_2\text{O}_2 + \text{H}^+ + \text{I}^- \rightarrow \text{I}_2 + \text{O}_2 + \text{H}_2\text{O}$
10.  $\text{H}_2\text{O}_2 + \text{H}^+ + \text{NO}_2^- \rightarrow \text{O}_2 + \text{NO}_3^- + \text{H}_2\text{O}$
11.  $\text{SO}_2 + \text{H}^+ + \text{MnO}_4^- \rightarrow \text{Mn}^{2+} + \text{H}_2\text{O} + \text{SO}_4^{2-}$
12.  $\text{Sn}^{2+} + \text{H}^+ + \text{Cr}_2\text{O}_7^{2-} \rightarrow \text{Cr}^{3+} + \text{H}_2\text{O} + \text{Sn}^{4+}$