

Redox Equations Practice Questions

- Balance the following redox equations. Be sure to indicate which element is being reduced and which element is being oxidized.
 - $\text{HNO}_3 + \text{H}_3\text{AsO}_3 \rightarrow \text{H}_3\text{AsO}_4 + \text{NO} + \text{H}_2\text{O}$
 - $\text{NaI} + \text{HOCl} \rightarrow \text{NaIO}_3 + \text{HCl}$
 - $\text{KMnO}_4 + \text{H}_2\text{C}_2\text{O}_4 + \text{H}_2\text{SO}_4 \rightarrow \text{CO}_2 + \text{K}_2\text{SO}_4 + \text{MnSO}_4 + \text{H}_2\text{O}$
 - $\text{H}_2\text{SO}_4 + \text{Al} \rightarrow \text{Al}_2(\text{SO}_4)_3 + \text{SO}_2 + \text{H}_2\text{O}$
 - $\text{K}_2\text{Cr}_2\text{O}_7 + \text{HCl} \rightarrow \text{KCl} + \text{CrCl}_3 + \text{Cl}_2 + \text{H}_2\text{O}$
 - $\text{NaIO}_3 + \text{NaI} + \text{HCl} \rightarrow \text{NaCl} + \text{I}_2 + \text{H}_2\text{O}$
 - $\text{Cu} + \text{HNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + \text{NO} + \text{H}_2\text{O}$
 - $\text{Cu} + \text{HNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + \text{NO}_2 + \text{H}_2\text{O}$
 - $\text{Cu} + \text{H}_2\text{SO}_4 \rightarrow \text{CuSO}_4 + \text{H}_2\text{O} + \text{SO}_2$
 - $\text{SO}_2 + \text{HNO}_3 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{SO}_4 + \text{NO}$
 - $\text{Zn} + \text{H}_2\text{SO}_4 \rightarrow \text{ZnSO}_4 + \text{H}_2\text{S} + \text{H}_2\text{O}$
 - $\text{I}_2 + \text{HNO}_3 \rightarrow \text{HIO}_3 + \text{NO}_2 + \text{H}_2\text{O}$
 - $\text{I}_2 + \text{NaOH} \rightarrow \text{NaI} + \text{NaIO}_3 + \text{H}_2\text{O}$
- Balance the following equations for reactions occurring in an acidic solution and then in a basic solution.
 - $\text{S}_2\text{O}_3^{2-} + \text{OCl}^- \rightarrow \text{Cl}^- + \text{S}_4\text{O}_6^{2-}$
 - $\text{NO}_3^- + \text{Cu} \rightarrow \text{NO}_2 + \text{Cu}^{2+}$
 - $\text{IO}_3^- + \text{AsO}_3^{3-} \rightarrow \text{I}^- + \text{AsO}_4^{3-}$
 - $\text{SO}_4^{2-} + \text{Zn} \rightarrow \text{Zn}^{2+} + \text{SO}_2$
 - $\text{NO}_3^- + \text{Zn} \rightarrow \text{NH}_4^+ + \text{Zn}^{2+}$
 - $\text{Cr}^{3+} + \text{BiO}_3^- \rightarrow \text{Cr}_2\text{O}_7^{2-} + \text{Bi}^{3+}$
 - $\text{I}_2 + \text{OCl}^- \rightarrow \text{IO}_3^- + \text{Cl}^-$
 - $\text{Mn}^{2+} + \text{BiO}_3^- \rightarrow \text{MnO}_4^- + \text{Bi}^{3+}$
 - $\text{H}_3\text{AsO}_3 + \text{Cr}_2\text{O}_7^{2-} \rightarrow \text{H}_3\text{AsO}_4 + \text{Cr}^{3+}$
 - $\text{I}^- + \text{HSO}_4^- \rightarrow \text{I}_2 + \text{SO}_2$
 - $\text{Sn} + \text{NO}_3^- \rightarrow \text{SnO}_2 + \text{NO}$
 - $\text{PbO}_2 + \text{Cl}^- \rightarrow \text{PbCl}_2 + \text{Cl}_2$
 - $\text{Ag} + \text{NO}_3^- \rightarrow \text{NO}_2 + \text{Ag}^+$
 - $\text{Fe}^{3+} + \text{NH}_3\text{OH}^+ \rightarrow \text{Fe}^{2+} + \text{N}_2\text{O}$
 - $\text{HNO}_2 + \text{I}^- \rightarrow \text{I}_2 + \text{NO}$
 - $\text{C}_2\text{O}_4^{2-} + \text{HNO}_2 \rightarrow \text{CO}_2 + \text{NO}$
 - $\text{HNO}_2 + \text{MnO}_4^- \rightarrow \text{Mn}^{2+} + \text{NO}_3^-$
 - $\text{H}_3\text{PO}_2 + \text{Cr}_2\text{O}_7^{2-} \rightarrow \text{H}_3\text{PO}_4 + \text{Cr}^{3+}$
 - $\text{VO}_2^+ + \text{Sn}^{2+} \rightarrow \text{VO}^{2+} + \text{Sn}^{4+}$
 - $\text{XeF}_2 + \text{Cl}^- \rightarrow \text{Xe} + \text{F}^- + \text{Cl}_2$