Common Ions and Formulae

Positively charged ions	
Name	**Formula**
Hydrogen	H^+
Lithium	Li^+
Sodium	Na^+
Potassium	K^+
Silver	Ag^+
Magnesium	Mg^{2+}
Calcium	Ca^{2+}
Copper	Cu^{2+}
Zinc	Zn^{2+}
Lead	Pb^{2+}
Iron	Fe^{3+}
Aluminium	Al^{3+}

Negatively charged ions	
Name	**Formula**
Fluoride	F^-
Chloride	Cl^-
Bromide	Br^-
Hydroxide	OH^-
Nitrate	NO_3^-
Oxide	O^{2-}
Sulfide	S^{2-}
Carbonate	CO_3^{2-}
Sulfate	SO_4^{2-}

Half chemical, ionic and half equations examples *(HT only)*

The reaction between magnesium and hydrochloric acid can be represented by:	
The word equation	Magnesium + hydrochloric acid → magnesium chloride + hydrogen
The chemical equation	$Mg(s) + 2HCl(aq) \rightarrow MgCl_2(aq) + H_2(g)$
The ionic equation	$Mg(s) + 2H^+(aq) \rightarrow Mg^{2+}(aq) + H_2(g)$
The two half equations	$Mg \rightarrow Mg^{2+} + 2e^-$ (oxidation), and $2H+(aq) + 2e^- \rightarrow H_2(g)$ (reduction)

The reaction between zinc and hydrochloric acid can be represented by:	
The word equation	Zinc + hydrochloric acid → zinc chloride + hydrogen
The chemical equation	$Zn(s) + 2HCl(aq) \rightarrow ZnCl_2(aq) + H_2(g)$
The ionic equation	$Zn(s) + 2H^+(aq) \rightarrow Zn^{2+}(aq) + H_2(g)$
The two half equations	$Zn \rightarrow Zn^{2+} + 2e^-$ (oxidation), and $2H^+(aq) + 2e^- \rightarrow H_2(g)$ (reduction)

The reaction between iron and hydrochloric acid can be represented by:	
The word equation	Iron + hydrochloric acid → iron chloride + hydrogen
The chemical equation	$Fe(s) + 2HCl(aq) \rightarrow FeCl_2(aq) + H_2(g)$
The ionic equation	$Fe(s) + 2H^+(aq) \rightarrow Fe^{2+}(aq) + H_2(g)$
The two half equations	$Fe \rightarrow Fe^{2+} + 2e^-$ (oxidation), and $2H+(aq) + 2e^- \rightarrow H_2(g)$ (reduction)

The reaction between magnesium and sulfuric acid can be represented by:	
The word equation	Magnesium + sulfuric acid → magnesium sulfate + hydrogen
The chemical equation	$Mg(s) + H_2SO_4(aq) \rightarrow MgSO_4(aq) + H_2(g)$
The ionic equation	$Mg(s) + 2H^+(aq) \rightarrow Mg^{2+}(aq) + H_2(g)$
The two half equations	$Mg \rightarrow Mg^{2+} + 2e^-$ (oxidation), and $2H+(aq) + 2e^- \rightarrow H_2(g)$ (reduction)

The reaction between zinc and sulfuric acid can be represented by:	
The word equation	Zinc + sulfuric acid → zinc sulfate + hydrogen
The chemical equation	$Zn(s) + H_2SO_4(aq) \rightarrow ZnSO_4(aq) + H_2(g)$
The ionic equation	$An(s) + 2H^+(aq) \rightarrow Mg^{2+}(aq) + H_2(g)$
The two half equations	$Zn \rightarrow Zn^{2+} + 2e^-$ (oxidation), and $2H+(aq) + 2e^- \rightarrow H_2(g)$ (reduction)

The reaction between iron and sulfuric acid can be represented by:	
The word equation	Iron + sulfuric acid → iron sulfate + hydrogen
The chemical equation	$Fe(s) + H_2SO_4(aq) \rightarrow FeSO_4(aq) + H_2(g)$
The ionic equation	$Fe(s) + 2H^+(aq) \rightarrow Fe^{2+}(aq) + H_2(g)$
The two half equations	$Fe \rightarrow Fe^{2+} + 2e^-$ (oxidation), and $2H+(aq) + 2e^- \rightarrow H_2(g)$ (reduction)