



# STARTER FOR 10!!!

## 9.1.2 Redox: Half Equations

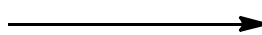
Balance the half equations by balancing the atoms and adding

Electrons

$H^+$

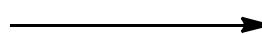
$H_2O$

1. Mg



$Mg^{2+}$

2.  $Cl_2$



$Cl^-$

3.  $H_2O_2$



$O_2$

4.  $SO_4^{2-}$



$SO_2$

5.  $CH_3CH_2OH$



$CH_3COOH$

6.  $CH_3CH_2OH$



$CH_3CHO$

7.  $Cr_2O_7^{2-}$



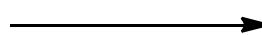
$Cr^{3+}$

8.  $MnO_4^-$



$Mn^{2+}$

9.  $H_2S$



S

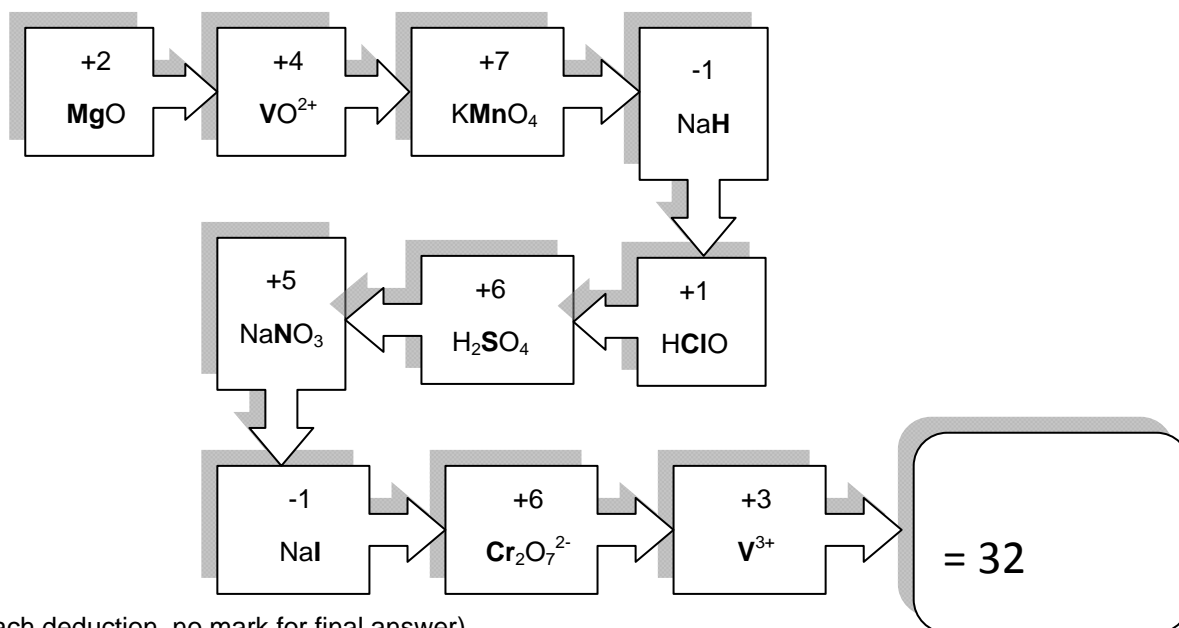
10.  $IO_3^-$



$I_2$

CHAPTER 9: Answers

9.1.1



(1 mark each deduction, no mark for final answer)

9.1.2

- $\text{Mg} \longrightarrow \text{Mg}^{2+} + 2\text{e}^-$
- $\text{Cl}_2 + 2\text{e}^- \longrightarrow 2\text{Cl}^-$
- $\text{H}_2\text{O}_2 \longrightarrow 2\text{O}_2 + 2\text{H}^+ + 2\text{e}^-$
- $\text{SO}_4^{2-} + 4\text{H}^+ + 2\text{e}^- \longrightarrow \text{SO}_2 + 2\text{H}_2\text{O}$
- $\text{CH}_3\text{CH}_2\text{OH} + \text{H}_2\text{O} \longrightarrow \text{CH}_3\text{COOH} + 4\text{H}^+ + 4\text{e}^-$
- $\text{CH}_3\text{CH}_2\text{OH} \longrightarrow \text{CH}_3\text{CHO} + 2\text{H}^+ + 2\text{e}^-$
- $\text{Cr}_2\text{O}_7^{2-} + 14\text{H}^+ + 6\text{e}^- \longrightarrow 2\text{Cr}^{3+} + 7\text{H}_2\text{O}$
- $\text{MnO}_4^- + 8\text{H}^+ + 5\text{e}^- \longrightarrow \text{Mn}^{2+} + 4\text{H}_2\text{O}$
- $\text{H}_2\text{S} \longrightarrow \text{S} + 2\text{H}^+ + 2\text{e}^-$
- $2\text{IO}_3^- + 12\text{H}^+ + 10\text{e}^- \longrightarrow \text{I}_2 + 6\text{H}_2\text{O}$