



1 Sodium is extracted by the electrolysis of molten sodium chloride.

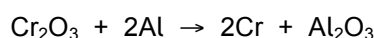
a Write a half equation for the conversion of sodium ions to sodium atoms in this process.



b Explain whether the production of sodium in this method is an oxidation or reduction process.

reduction as sodium ions gain electrons

2 Chromium can be extracted from chromium(III) oxide (Cr_2O_3) in a displacement reaction with aluminium.



a Write a half equation for the conversion of chromium ions to chromium atoms in this process.



b Write a half equation for the conversion of aluminium atoms to aluminium ions in this process.



c Write an ionic equation for this process.



d Explain, in terms of electrons, why aluminium is more reactive than chromium.

aluminium atoms lose electrons more easily than chromium atoms

e Explain, in terms of electrons, why this is a redox reaction.

both reduction & oxidation take place
aluminium atoms lose electrons = oxidation
chromium ions gain electrons = reduction