

Solutions

Each answer shows the steps, then the **result**.

2.1

- oxidising power decreases down the group; the larger atoms attract an extra electron less strongly

2.2

- $\text{Cl}_2 + 2\text{KBr} \rightarrow 2\text{KCl} + \text{Br}_2$

3.1 A

- Chlorine is the strongest oxidising agent

3.2 C

- HI is the least thermally stable (weakest H–X bond)

3.3

(a)

- no; bromine is a weaker oxidising agent than chlorine, so it cannot displace chloride

(b)

- the H–I bond is longer and weaker than H–Cl, so HI decomposes more easily on heating

3.4

- down the group the atoms get larger with more shielding, so they attract an extra electron less strongly — weaker oxidising agents