

Solutions

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

2.1

- red-brown / orange-brown; liquid

2.2

- volatility decreases down the group

3.1 B

- Iodine has more electrons, so stronger id-id forces between molecules

3.2 B

- Subliming breaks the intermolecular (id-id) forces, not the covalent bond

3.3

- down the group the molecules have more electrons; so the instantaneous dipole-induced dipole forces are stronger; more energy is needed to separate the molecules, so the boiling point rises

3.4

- the I_2 atoms are larger, so the shared bonding electrons are further from the nuclei; the weaker attraction gives a lower bond energy