

## WARM-UP QUESTIONS: CHEMISTRY

1.

The first five ionization energies, in  $\text{kJ mol}^{-1}$ , of aluminium are

578    1817    2745    11 578    14 831

How can you tell it is in group 3?

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2.

What are the shapes and bond angles of the following molecules:

water

ammonia

carbon dioxide

methane

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3.

Name the product formed when propene reacts with bromine

Name the two products formed when propene reacts with HCl

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4.

Write down the electron configuration of an Fe atom, an  $\text{Fe}^{2+}$  ion, and the formula of the precipitate formed when ammonia solution is added to  $[\text{Fe}(\text{H}_2\text{O})_6]^{2+}$

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5.

Explain why magnesium has a higher melting temperature than sodium

Explain why silicon has a higher melting temperature than chlorine

Explain why  $\text{H}_2\text{O}$  has a higher melting point than  $\text{Cl}_2$