



1 Complete the table about these atoms and ions.

atom / ion	protons	neutrons	electrons	electron structure
${}_{13}^{27}\text{Al}$				
${}_{13}^{27}\text{Al}^{3+}$				
${}_{8}^{17}\text{O}$				
${}_{8}^{17}\text{O}^{2-}$				

2 The electron structure of some atoms are given. Which group of the Periodic Table does each of these atoms belong to?

electron structure	2,8,7	2,8,8,1	2,8,18,3	2,8,18,18,6	2,8
group					

3 There are two isotopes of boron, which are shown in the table.

Isotope	${}_{5}^{10}\text{B}$	${}_{5}^{11}\text{B}$
Abundance	19.9%	80.1%

a Explain why they are both atoms of boron.

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b The radius of a boron atom is 180 pm. Write this in metres in standard form.

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c Calculate the relative atomic mass of boron to 3 significant figures.

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