0 1 This question is about oxygen atoms. The periodic table on the Data Sheet may help you to answer this question.

Two isotopes of oxygen are oxygen-16 and oxygen-18.

$^{16}_{8}O$ oxygen-16 $^{18}_{8}O$ oxygen-18

TOP TIP :
If you said, different number of neutrons, you would get one mark, but the information given allows you to be more precise and say exactly how many more neutrons.
You can't say refer to mass number because the question asks you about the particles.

0 1 . 1 Explain, in terms of particles, how the nucleus of an oxygen-18 atom is different from the nucleus of an oxygen-16 atom.

[2 marks]

It has more neutrons [1 mark]
It has 2 more neutrons [2 marks] Or
O-16 has 8 neutrons [1 mark] O-18 has 10 neutrons [1 mark]

0 2 A metal oxide has a relative formula mass (Mr) of 81. The formula of this metal oxide is XO.

X is not the correct symbol for the metal.

The relative atomic mass (Ar) of oxygen is 16.

0 2 . 1 Calculate the relative atomic mass (Ar) of metal X.

[2 marks]

81 - 16 **[1]**

Relative atomic mass (Ar) = 65 **[2]**

DON'T FORGET :
Remember to take into account the small numbers after the element.
The right answer will get you two marks but my advice is ALWAYS show your working, in case you make a mistake.

0 2 . 2 Use your answer to part 1 and the periodic table on the Data Sheet to name metal X.

The name of metal X is Zinc **[1]**

0 3 Swimming pools are treated in order to killed microbes. One type of treatment is adding calcium hypochlorite tablets to the water.

Calcium hypochlorite formula is $CaCl_2O_2$

0 3 . 1 Calculate the relative formula mass (M_r) of calcium hypochlorite.

[2 marks]

Relative atomic masses: O = 16; Cl = 35.5; Ca = 40.

40 + (35.5 x 2) + (16 x 2) [1]

Relative formula mass (M_r) of calcium hypochlorite = 143 **[2]**

(Total 7 marks)

End