

- 0 2** . **1** A sample of sulfur consisting of three isotopes has a relative atomic mass of 32.16
Table 1 gives the relative abundance of two of these isotopes.

Table 1

Mass number of isotope	32	33
Relative abundance / %	91.0	1.8

Use this information to determine the relative abundance and hence the mass number of the third isotope.

Give your answer to the appropriate number of significant figures.

[4 marks]

Mass number = _____

- 0 2** . **2** Describe how ions are formed in a time of flight (TOF) mass spectrometer.

[2 marks]

0 2 . 3 A TOF mass spectrometer can be used to determine the relative molecular mass of molecular substances.

Explain why it is necessary to ionise molecules when measuring their mass in a TOF mass spectrometer.

[2 marks]

Turn over for the next question