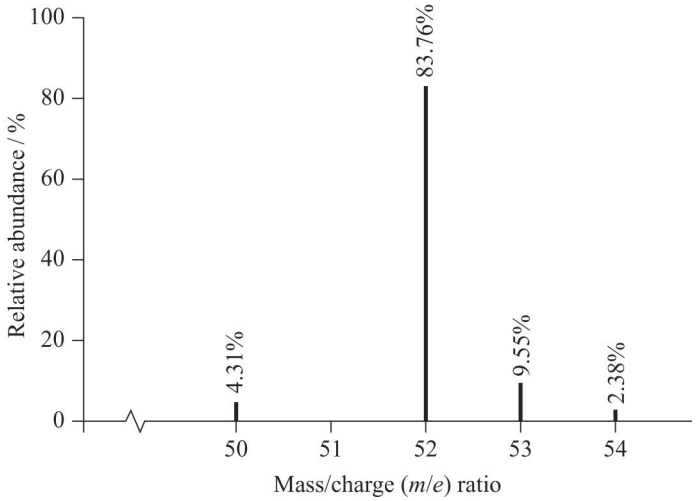
Worksheet 1.1

Mass spectra, isotopes and relative atomic mass

1 **a** What is the meaning of the term **relative atomic mass**?

b The mass spectrum of a sample of chromium, Cr, is shown below.



i Use the information from this mass spectrum to calculate the relative atomic mass of chromium. Give your answer to 3 significant figures.

ii Accurate relative isotopic masses can be found using a high-resolution mass spectrometer. What is the meaning of the term **relative isotopic mass**? [5]

2 The following tables show the relative abundances of different isotopes of osmium and erbium.

Isotope of Os	^{188}Os	^{189}Os	^{190}Os	^{192}Os
Relative abundance / %	13.30	16.10	26.40	41.00

Isotope of Er	^{162}Er	^{164}Er	^{166}Er	^{167}Er	^{168}Er	^{170}Er
Relative abundance / %	0.140	1.560	33.41	22.94	27.07	14.88

Use the information from these tables to calculate the relative atomic masses of osmium and erbium. Give your answers to 3 significant figures. [6]