Mass Spectrometer
and
How to Find Atomic Mass

same as the mass.

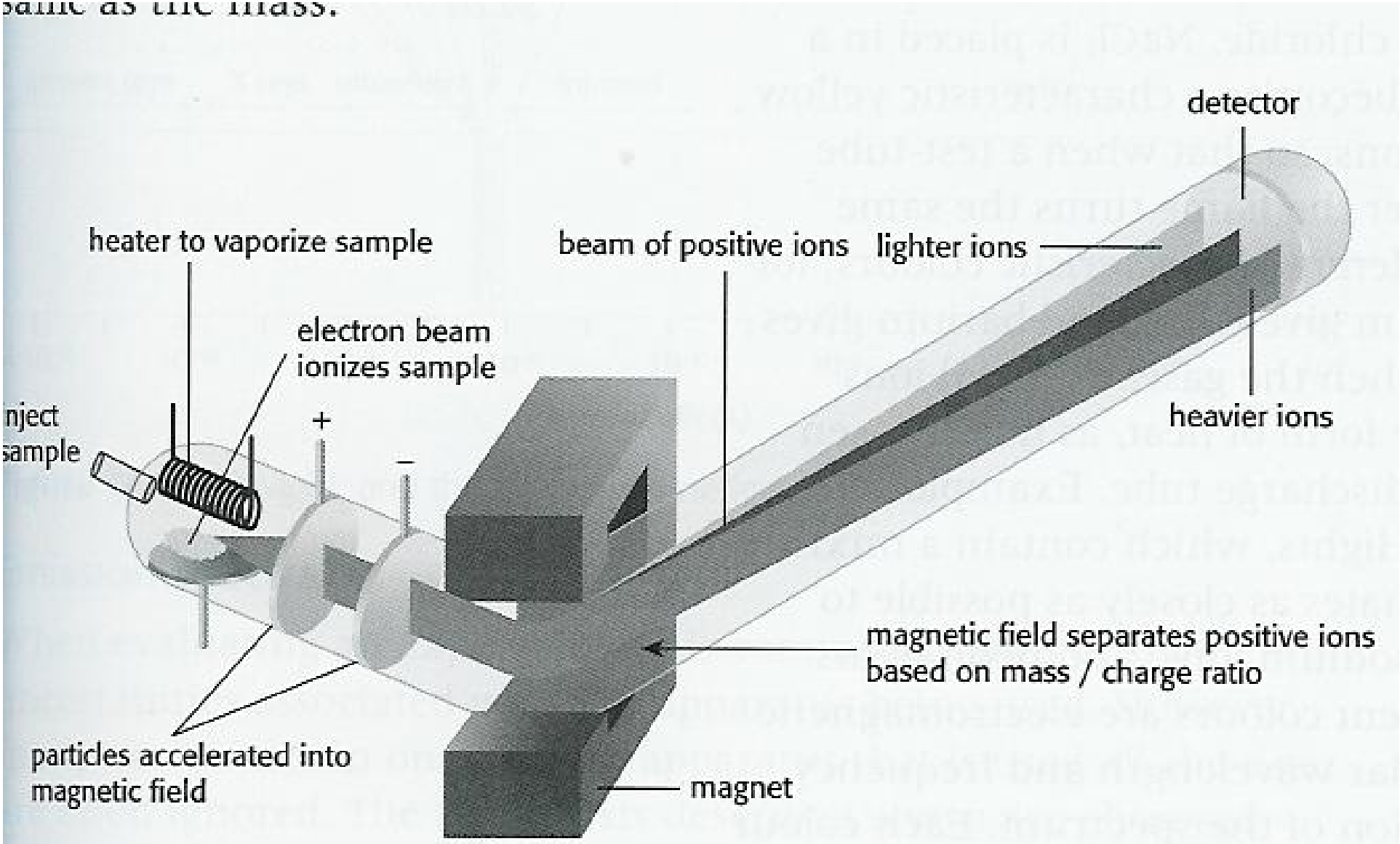
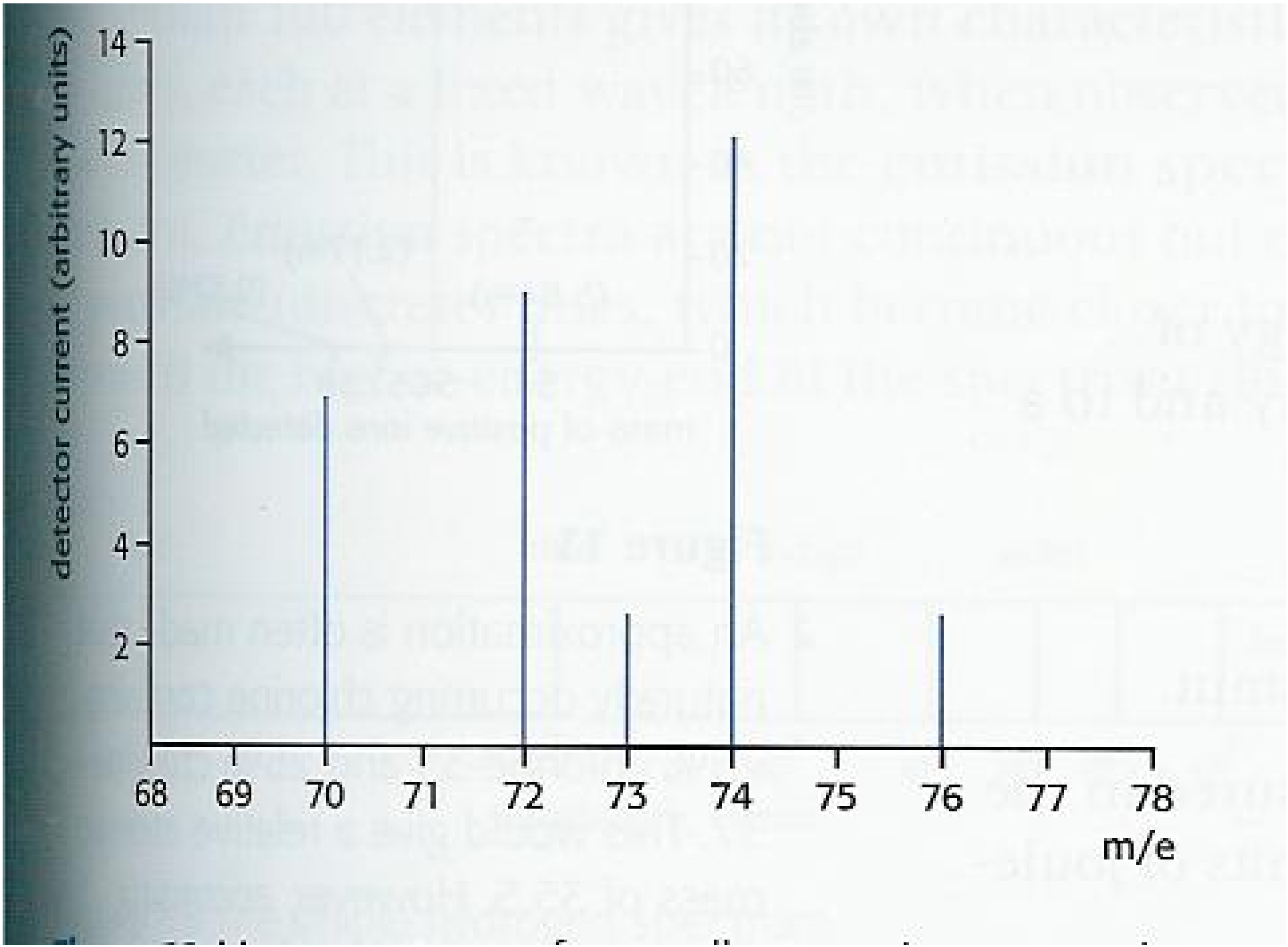


Figure 11 Diagram of a mass spectrometer

It has several stages of operation that you must get famiiliar with (i.e. learn!):

1. injection of the sample
2. vaporization of the sample (if it's not already gaseous)
3. ionization of the sample
4. acceleration of the ions
5. deflection of the ions
6. detection of the ions


detector current (arbitrary units)
14
12
10
8
6
4
2
68
69
70
71
72
73
74
75
76
77
78
m/e

The relative abundance of all the isotopes can be calculated in a similar way (Table 4).

The relative atomic mass of germanium is given by

$$A_r = \frac{(70 \times 20.5) + (72 \times 27.4) + (73 \times 7.8) + (74 \times 36.5) + (76 \times 7.8)}{100}$$

$$= 72.7$$

Table 4

Isotope	Relative abundance / %
70	20.5
72	27.4
73	7.8
74	36.5
76	7.8