

- 1 (a) The boxes in Fig. 1.1 contain terms on the left-hand side and examples of these terms on the right-hand side.

Draw a line between each term on the left and the correct example on the right.

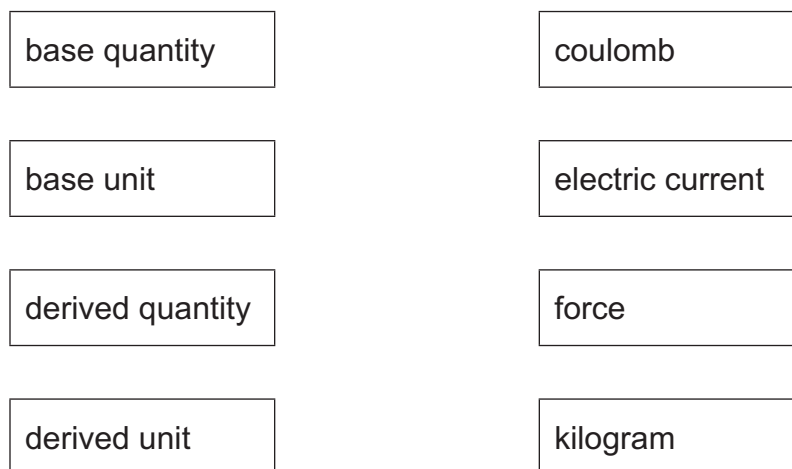


Fig. 1.1

[2]

- (b) A set of experimental measurements is described as precise and not accurate.

State what is meant by:

- (i) precise

.....
..... [1]

- (ii) not accurate.

.....
..... [1]

- (c) An object of mass m travels with speed v in a circle of radius r . The force F acting on the object is given by

$$F = \frac{mv^2}{r}.$$

The percentage uncertainties of three of the quantities are given in Table 1.1.

Table 1.1

quantity	percentage uncertainty
F	$\pm 3\%$
m	$\pm 4\%$
r	$\pm 5\%$

The value of v is determined from F , m and r .

- (i) Calculate the percentage uncertainty in v .

percentage uncertainty = % [2]

- (ii) The value of v is 15.0 ms^{-1} .

Calculate the absolute uncertainty in v .

absolute uncertainty = ms^{-1} [1]

[Total: 7]