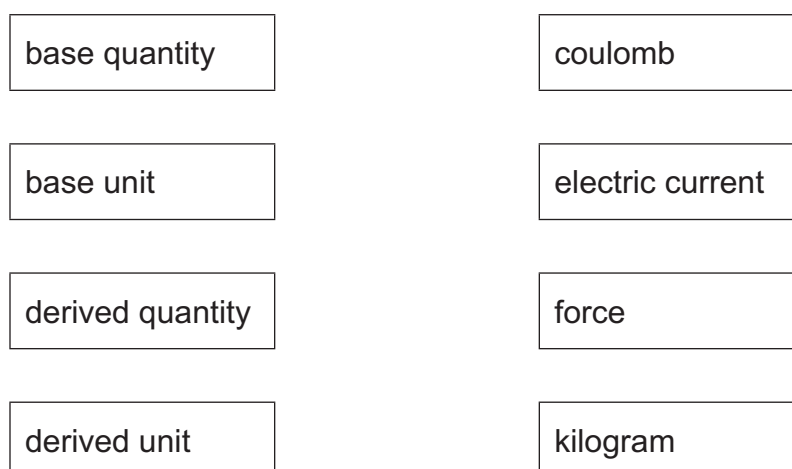


- 1 (a) The boxes in Fig. 1.1 contain terms on the left-hand side and examples of these terms on the right-hand side.

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  $15.0 \text{ ms}^{-1}$ .

Calculate the absolute uncertainty in  $v$ .

absolute uncertainty = .....  $\text{ms}^{-1}$  [1]