Answer **all** the questions in the spaces provided.

1 The speed v of a transverse wave on a uniform string is given by the expression

$$v = \sqrt{\frac{Tl}{m}}$$

where T is the tension in the string, l is its length and m is its mass.

An experiment is performed to determine the speed v of the wave. The measurements are shown in Fig. 1.1.

quantity	measurement	uncertainty
T	1.8N	± 5%
l	126cm	± 1%
m	5.1g	± 2%

Fig. 1.1

(a) State an appropriate instrument to measure the length l.

..... [1]

(b) **(i)** Use the data in Fig. 1.1 to calculate the speed v.

v = ... $m\,s^{-1}$ [2]

(ii) Use your answer in **(b)(i)** and the data in Fig. 1.1 to determine the value of v, with its absolute uncertainty, to an appropriate number of significant figures.

v = ... ± .....$m\,s^{-1}$ [3]

[Total: 6]

[Turn over