1 Measurements made for a sample of metal wire are shown in Fig. 1.1.

quantity	measurement	uncertainty
length	1750 mm	± 3 mm
diameter	0.38 mm	± 0.01 mm
resistance	7.5 Ω	± 0.2 Ω

Fig. 1.1

(a) State the appropriate instruments used to make each of these measurements.

(i) length

..... [1]

(ii) diameter

..... [1]

(iii) resistance

..... [1]

(b) **(i)** Show that the resistivity of the metal is calculated to be $4.86 \times 10^{-7}\,\Omega\,\text{m}$.

[2]

(ii) Calculate the uncertainty in the resistivity.

uncertainty = ± ..... Ω m [4]

(c) the answers in **(b)** to express the resistivity with its uncertainty to the appropriate number of significant figures.

resistivity = ... ± ..... Ω m [1]