1 **(a)** A unit may be stated with a prefix that represents a power-of-ten multiple or submultiple.

Complete Table 1.1 to show the name and symbol of each prefix and the corresponding power-of-ten multiple or submultiple.

Table 1.1

prefix	power-of-ten multiple or submultiple
kilo (k)	10^3
tera (T)	
( )	10^{-12}

[2]

(b) In the following list, underline all the units that are SI base units.

ampere coulomb metre newton [1]

(c) The potential difference V between the two ends of a uniform metal wire is given by

$$V = \frac{4\rho LI}{\pi d^2}$$

where d is the diameter of the wire,
I is the current in the wire,
L is the length of the wire,
and ρ is the resistivity of the metal.

a particular wire, the percentage uncertainties in the values of some of the above quantities are listed in Table 1.2.

Table 1.2

quantity	percentage uncertainty
d	±3.0%
I	±2.0%
L	±2.5%
V	±3.5%

The quantities listed in Table 1.2 have values that are used to calculate ρ as $4.1 \times 10^{-7}\,\Omega\,\text{m}$.

this value of ρ, calculate:

(i) the percentage uncertainty

percentage uncertainty = ...% [2]

(ii) the absolute uncertainty.

absolute uncertainty = ... Ω m [1]

[Total: 6]