

AQA – Measurements and their errors – AS Physics P2

1. June/2021/Paper_7407_02/No.02.4

0 2 . 4 Deduce the fundamental base units for k .

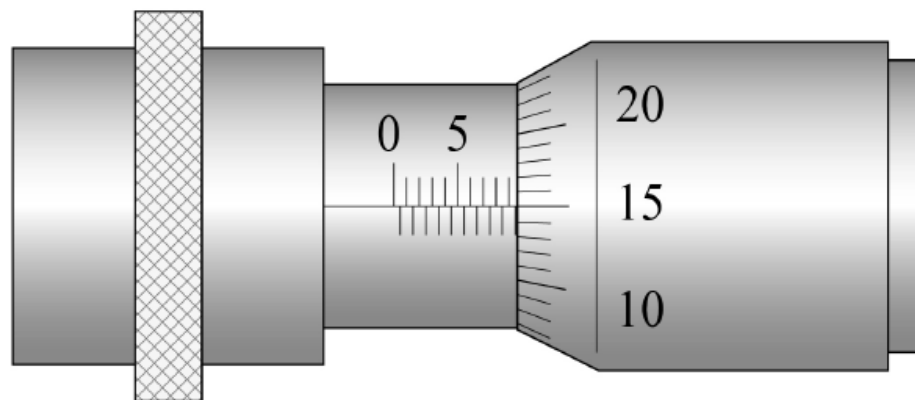
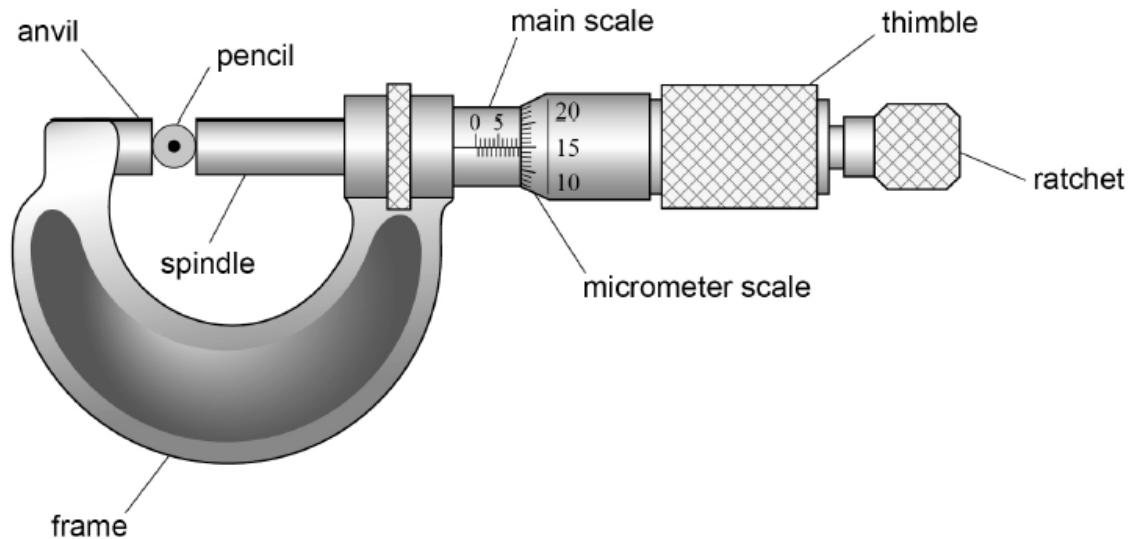
[1 mark]

fundamental base units for k = _____

2. June/2021/Paper_7407_02/No.03

0 3 Figure 9 shows a micrometer screw gauge used to measure the diameter of a pencil.

Figure 9



main scale and micrometer scale
shown enlarged

0 3 . 1 State the reading on the micrometer.

[1 mark]

reading = _____ unit = _____

0 3 . 2 The micrometer has a zero error.

Describe how to determine an accurate measurement for the diameter of the pencil using this micrometer.

[2 marks]

3. June/2021/Paper_7407_02/No.33

Measurements are taken to determine the resistivity of a uniform metal wire. The table shows the quantities measured and their percentage uncertainties.

Quantity	Percentage uncertainty
potential difference across wire	0.3%
current in wire	5.0%
diameter of wire	4.0%
length of wire	0.2%

What is the percentage uncertainty in the calculated value for the resistivity of the metal of the wire?

[1 mark]

- A** 1.6%
- B** 9.5%
- C** 13.5%
- D** 21.5%

4. June/2020/Paper_7407_02/No.(01.4_01.5)

0 1 . 4

The absolute uncertainty in each of the readings R_0 , R_1 and R_2 is 0.04 mm.

State the absolute uncertainty in $R_2 - R_0$.

[1 mark]

absolute uncertainty in $R_2 - R_0 =$ _____ mm

0 1 . 5

The absolute uncertainty in $R_2 - R_1$ is the same as the absolute uncertainty in $R_2 - R_0$.

Calculate the percentage uncertainty in n .

[3 marks]

5. June/2020/Paper_7407_02/No.05

0 5

Which row shows SI unit prefixes in order of smallest value to largest value?

[1 mark]

	Smallest			Largest	
A	p	n	c	μ	<input type="radio"/>
B	p	n	μ	c	<input type="radio"/>
C	n	p	c	μ	<input type="radio"/>
D	n	p	μ	c	<input type="radio"/>

6. June/2020/Paper_7407_02/No.17

1 7 Which row describes charge and impulse?

[1 mark]

	Charge	Impulse	
A	scalar	scalar	<input type="radio"/>
B	scalar	vector	<input type="radio"/>
C	vector	scalar	<input type="radio"/>
D	vector	vector	<input type="radio"/>