

- 6 A student finds the density of a liquid by measuring its mass and its volume. The following is a summary of his measurements.

$$\text{mass of empty beaker} = (20 \pm 1)\text{g}$$

$$\text{mass of beaker + liquid} = (70 \pm 1)\text{g}$$

$$\text{volume of liquid} = (10.0 \pm 0.6)\text{cm}^3$$

He correctly calculates the density of the liquid as  $5.0\text{g cm}^{-3}$ .

What is the uncertainty in this value?

- A  $0.3\text{g cm}^{-3}$       B  $0.5\text{g cm}^{-3}$       C  $0.6\text{g cm}^{-3}$       D  $2.6\text{g cm}^{-3}$
- 7 A micrometer screw gauge is used to measure the diameter of a copper wire.

The reading with the wire in position is shown in diagram 1. The wire is removed and the jaws of the micrometer are closed. The new reading is shown in diagram 2.

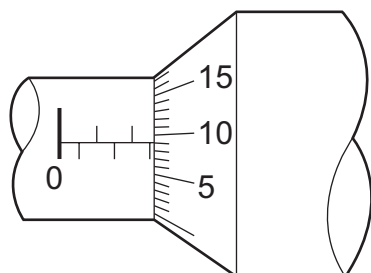


diagram 1

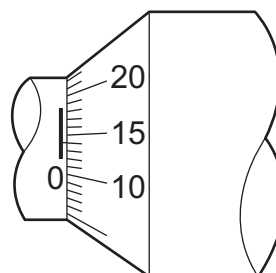


diagram 2

What is the diameter of the wire?

- A 1.90 mm      B 2.45 mm      C 2.59 mm      D 2.73 mm

**Space for working**