

- 4 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.

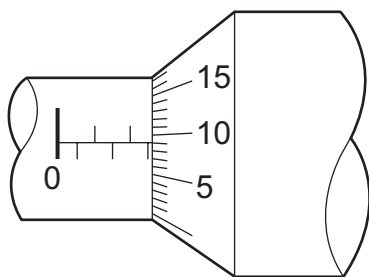


diagram 1

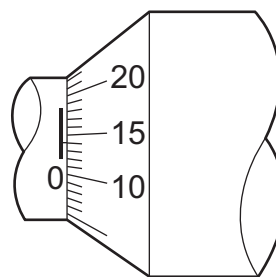


diagram 2

What is the diameter of the wire?

- A** 1.90 mm      **B** 2.45 mm      **C** 2.59 mm      **D** 2.73 mm
- 5 A digital meter has an accuracy of  $\pm 1\%$ .

The meter is used to measure the current in an electrical circuit.

The reading on the meter varies between 3.04 A and 3.08 A.

What is the value of the current, with its uncertainty?

- A**  $(3.06 \pm 0.02) \text{ A}$   
**B**  $(3.06 \pm 0.04) \text{ A}$   
**C**  $(3.06 \pm 0.05) \text{ A}$   
**D**  $(3.06 \pm 0.07) \text{ A}$
- 6 A tennis ball is thrown horizontally in air from the top of a tall building.

The effect of air resistance is **not** negligible.

What happens to the horizontal and to the vertical components of the ball's velocity?

	horizontal component of velocity	vertical component of velocity
<b>A</b>	constant	constant
<b>B</b>	constant	increases at a constant rate
<b>C</b>	decreases to zero	increases at a constant rate
<b>D</b>	decreases to zero	increases to a maximum value