

- 6 A digital caliper is used to measure the 28.50 mm width of a plastic ruler. The digital caliper reads to the nearest 0.01 mm.

What is the correct way to record this reading?

- A  $0.02850 \pm 0.01 \text{ m}$
  - B  $0.0285 \pm 0.001 \text{ m}$
  - C  $(2.850 \pm 0.001) \times 10^{-2} \text{ m}$
  - D  $(2.850 \pm 0.001) \times 10^{-3} \text{ m}$
- 7 An experiment is performed to measure the acceleration of free fall  $g$ . A body falls between two fixed points. The four measurements shown below are taken.

Which measurement is **not** required for the calculation of  $g$ ?

- A the distance fallen by the body
  - B the initial velocity of the body
  - C the mass of the body
  - D the time taken for the body to fall
- 8 In a cathode-ray tube, an electron is accelerated uniformly in a straight line from a speed of  $4 \times 10^3 \text{ ms}^{-1}$  to  $2 \times 10^7 \text{ ms}^{-1}$  over a distance of 10 mm.

What is the acceleration of the electron?

- A  $2 \times 10^3 \text{ ms}^{-2}$
- B  $2 \times 10^6 \text{ ms}^{-2}$
- C  $2 \times 10^{13} \text{ ms}^{-2}$
- D  $2 \times 10^{16} \text{ ms}^{-2}$

**Space for working**