

- 5 A student measures the length l and the period T of oscillation of a simple pendulum. He then uses the equation shown to calculate the acceleration of free fall g .

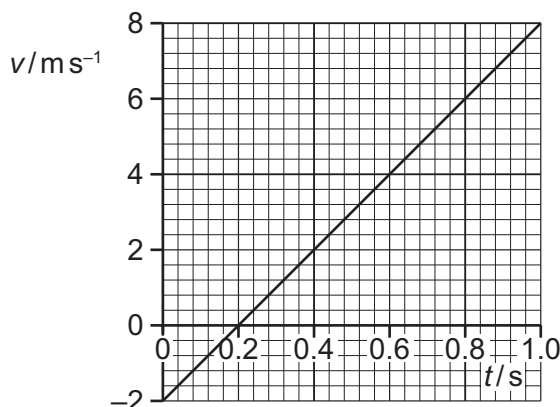
$$T = 2\pi\sqrt{\frac{l}{g}}$$

His measurements are shown.

l	$(87.3 \pm 0.2) \text{ cm}$
T	$(1.9 \pm 0.05) \text{ s}$

What is the percentage uncertainty in his calculated value of g ?

- A** 2.4% **B** 2.9% **C** 5.5% **D** 7.2%
- 6 An object moves in a straight line. The graph shows the variation with time t of the velocity v of the object.



At time $t = 0$ the object is at point X.

What is the displacement of the object from point X at time $t = 0.80 \text{ s}$?

- A** 1.6 m **B** 1.8 m **C** 2.0 m **D** 3.2 m
- 7 An object accelerates uniformly from rest to speed v . It then moves at constant speed v for a time of 8.0 s before decelerating uniformly to rest. The total time taken is 12.0 s, and the total distance travelled is 60 m.

What is the speed v ?

- A** 3.0 ms^{-1} **B** 5.0 ms^{-1} **C** 6.0 ms^{-1} **D** 15 ms^{-1}