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.

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

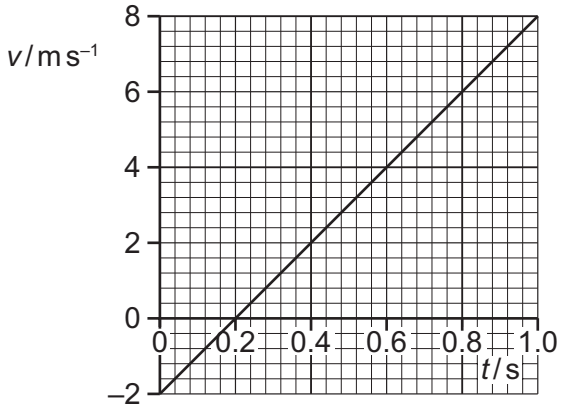
His measurements are shown.

l	(87.3 ± 0.2) cm
T	(1.9 ± 0.05) 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 $t = 0.80$ 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 m s^{-1} **B** 5.0 m s^{-1} **C** 6.0 m s^{-1} **D** 15 m s^{-1}