5 A steel ball is dropped and falls through a vertical height h. The time t taken to fall is measured using light gates.

The results are given in the table.

h	$(4.05 \pm 0.01)\,\text{m}$
t	$(0.91 \pm 0.02)\,\text{s}$

The acceleration of free fall g is calculated using the equation shown.

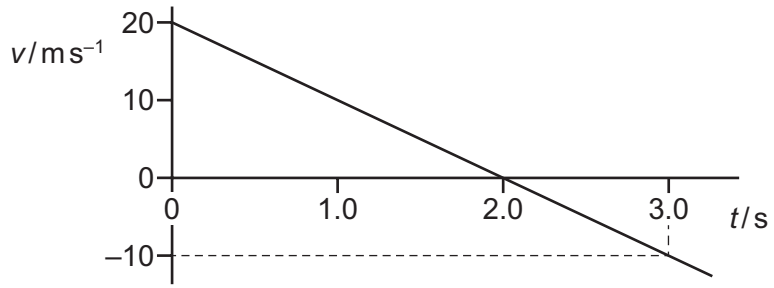
$$h = \tfrac{1}{2}gt^2$$

What is the percentage uncertainty in the value of g?

A 2.4% **B** 4.6% **C** 5.1% **D** 9.3%

6 A stone is thrown vertically upwards from a point X at time $t = 0$.

The variation with time t of the velocity v of the stone is shown.



What is the displacement of the stone from point X at time $t = 3.0\,\text{s}$?

A 15 m above X

B 15 m below X

C 25 m above X

D 25 m below X