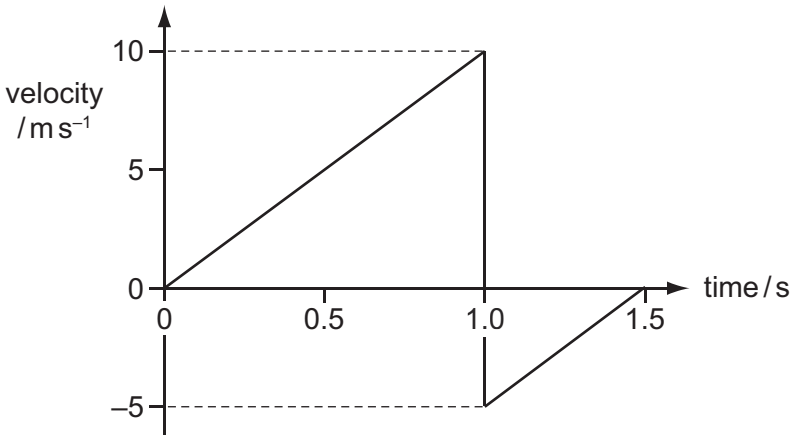
8 A ball is released from rest at time zero. After 1.0 s it bounces inelastically from a horizontal surface and rebounds, reaching the top of its first bounce after 1.5 s.



What is the total displacement of the ball from its original position after 1.5 s?

A 1.25 m **B** 3.75 m **C** 5.00 m **D** 6.25 m

9 A molecule of mass *m* travelling horizontally with velocity *u* hits a vertical wall at right-angles to its velocity. It then rebounds horizontally with the same speed.

What is its change in momentum?

A zero **B** *mu* **C** $-mu$ **D** $-2mu$

Space for working