4 An object of fixed mass is initially at rest at point P. The object then moves away from point P with uniform acceleration.

Which statement describes the resultant force acting on the object when it is moving?

A It increases uniformly with respect to time.

B It is constant but not zero.

C It is proportional to the displacement from point P.

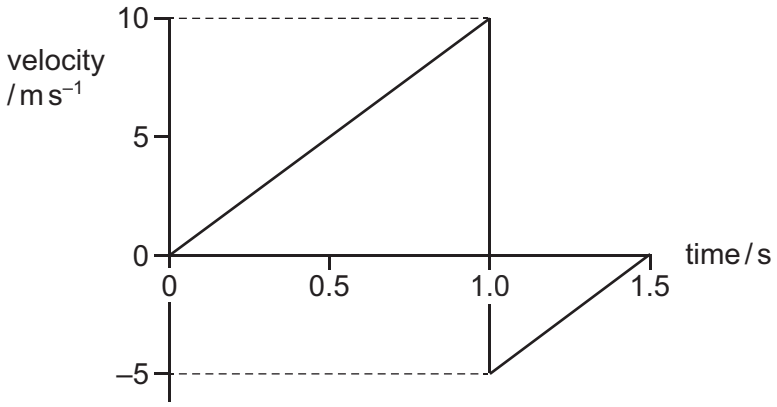
D It is zero.

5 A projectile is launched at an angle of 25° to the horizontal with a horizontal component of velocity of $13\,m\,s^{-1}$.

What is the vertical component of the velocity of the projectile when it is launched?

A $5.5\,m\,s^{-1}$ **B** $6.1\,m\,s^{-1}$ **C** $12\,m\,s^{-1}$ **D** $14\,m\,s^{-1}$

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



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

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

7 What is the definition of acceleration?

A change in velocity per unit time

B rate of change of speed per unit time

C rate of change of velocity per unit time

D resultant force per unit mass