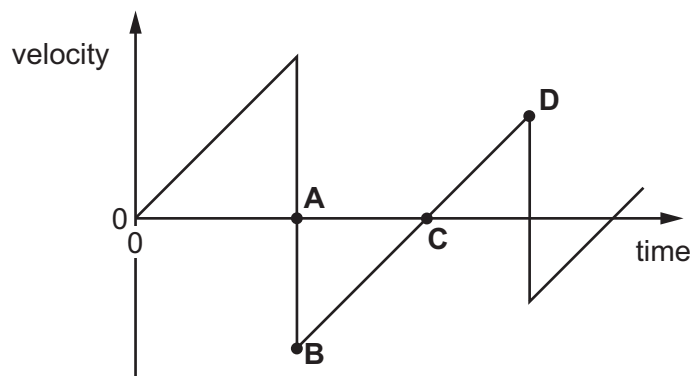


- 5 A ball is released from rest above a hard, horizontal surface. The graph shows how the velocity of the bouncing ball varies with time.

At which point on the graph does the ball reach its maximum height after the first bounce?



- 6 A ball is kicked upwards at an angle of 45° to horizontal ground. After a short flight, the ball returns to the ground.

It may be assumed that air resistance is negligible.

What is **never** zero during the flight of the ball?

- A the horizontal component of the ball's acceleration
 - B the horizontal component of the ball's velocity
 - C the vertical component of the ball's momentum
 - D the vertical component of the ball's velocity
- 7 The mass of a rocket-propelled truck is approximately equal to the mass of the fuel in its tank. The fuel is ignited and the truck is propelled along horizontal tracks by a constant force. The effect of air resistance is negligible.

During a test run the fuel is consumed at a constant rate.

Which statement describes the acceleration of the truck during the test run?

- A The acceleration of the truck decreases as the fuel is consumed.
- B The acceleration of the truck increases as the fuel is consumed.
- C The acceleration of the truck remains constant.
- D The acceleration of the truck is zero and the truck moves at a constant velocity.