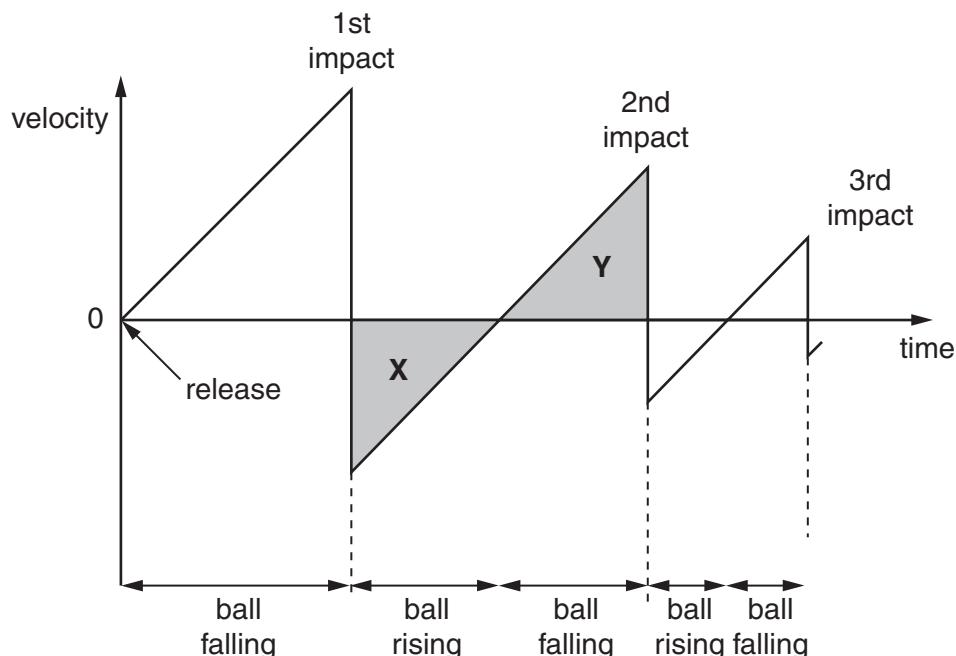


- 9 A ball is released from rest above a horizontal surface. The graph shows the variation with time of its velocity.



Areas **X** and **Y** are equal.

This is because

- A the ball's acceleration is the same during its upward and downward motion.
- B the speed at which the ball leaves the surface after an impact is equal to the speed at which it returns to the surface for the next impact.
- C for one impact, the speed at which the ball hits the surface equals the speed at which it leaves the surface.
- D the ball rises and falls through the same distance between impacts.

- 10 Two blocks X and Y, of masses m and $2m$ respectively, are accelerated along a smooth horizontal