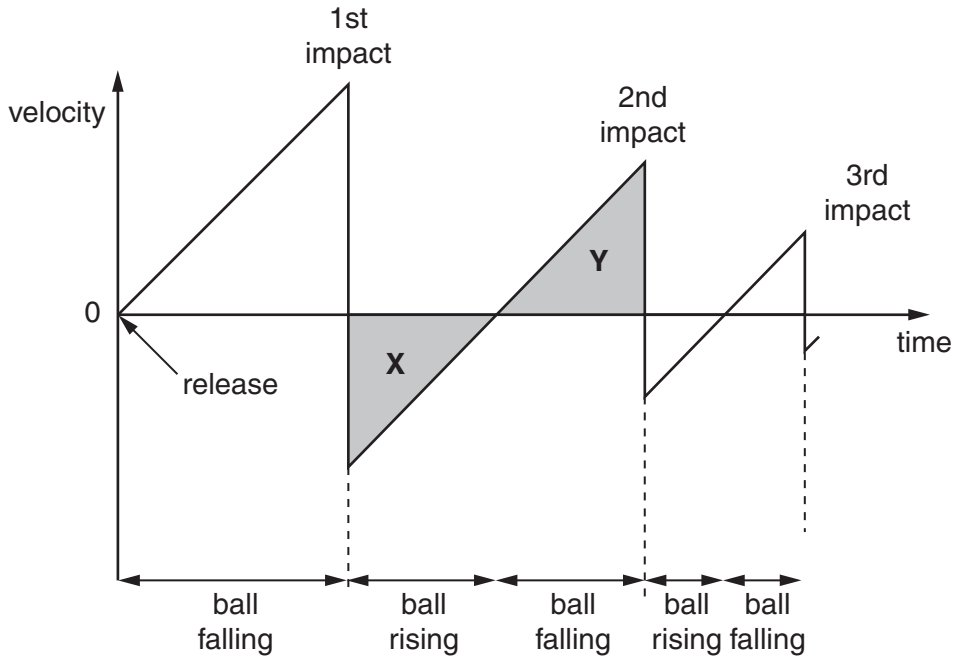
9 A ball is released from rest above a horizontal surface. The graph shows the variation with time of its velocity.



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

This is because

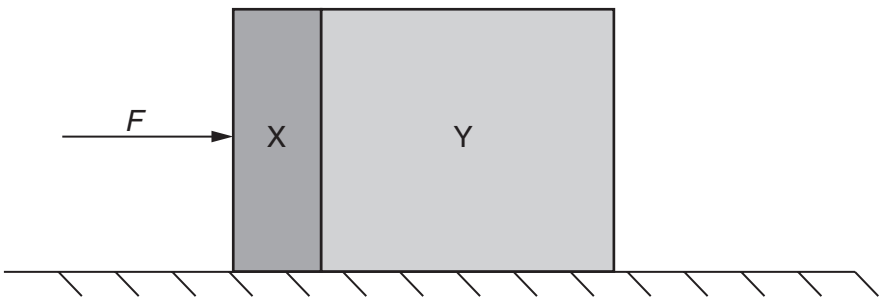
A the ball's acceleration is the same during its upward and downward motion.

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 $3m$ respectively, are accelerated along a smooth horizontal surface by a force F applied to block X as shown.



What is the magnitude of the force exerted by block X on block Y during this acceleration?

A $\frac{F}{4}$ **B** $\frac{F}{3}$ **C** $\frac{F}{2}$ **D** $\frac{3F}{4}$