**6** A ball is thrown horizontally with a speed of $10.0\,m\,s^{-1}$ above horizontal ground. The ball hits the ground after a time of 3.0 s.

Air resistance is negligible.

What is the speed of the ball just before it hits the ground?

**A** $10\,m\,s^{-1}$ **B** $29\,m\,s^{-1}$ **C** $31\,m\,s^{-1}$ **D** $39\,m\,s^{-1}$

**7** An object is moving along the ground in a straight line at a constant speed.

Which statement about the resultant force acting on the object is correct?

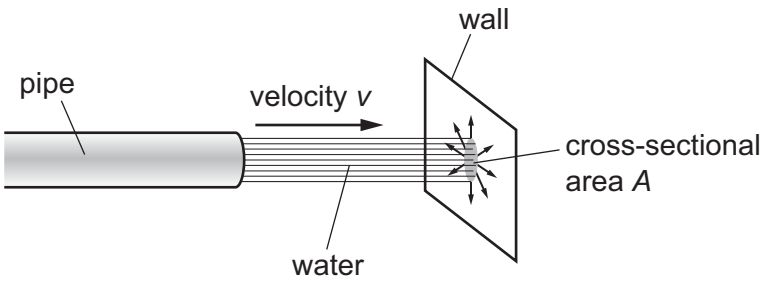
**A** The resultant force acting on the object is equal to its weight.

**B** The resultant force acting on the object is equal to the product of its mass and its velocity.

**C** The resultant force acting on the object is equal to the resistive force.

**D** The resultant force acting on the object is equal to zero.

**8** Water flows out of a pipe and hits a wall.




When the jet of water hits the wall, it has horizontal velocity $v$ and cross-sectional area $A$.

The density of the water is $\rho$. The water does not rebound from the wall.

What is the force exerted on the wall by the water?

**A** $\frac{\rho v}{A}$ **B** $\frac{\rho v^2}{A}$ **C** $\rho A v$ **D** $\rho A v^2$