

**10** A ball of mass  $m$ , moving at a velocity  $v$ , collides with a stationary ball of mass  $2m$ .

The two balls stick together.

Which fraction of the initial kinetic energy is lost on impact?

A  $\frac{1}{9}$

B  $\frac{1}{3}$

C  $\frac{2}{3}$

D  $\frac{8}{9}$

**11** A ball of mass  $m$  will just roll up a hill of height  $h$ .