

**6** A molecule of mass  $m$  travels with velocity  $+u$  directly towards a stationary molecule of mass  $4m$  and collides elastically with it.

What is the velocity of the molecule of mass  $m$  after the collision?

**A**  $+ \frac{u}{5}$

**B**  $- \frac{3}{5} u$

**C**  $- \frac{4}{5} u$

**D**  $-u$