

- 12** Two railway trucks of masses  $m$  and  $3m$  move towards each other in opposite directions with speeds  $2v$  and  $v$  respectively. These trucks collide and stick together.

What is the speed of the trucks after the collision?

**A**  $\frac{v}{4}$

**B**  $\frac{v}{2}$

**C**  $v$

**D**  $\frac{5v}{4}$

- 13** The diagrams show three forces acting on a body: