

# Solutionbank M1

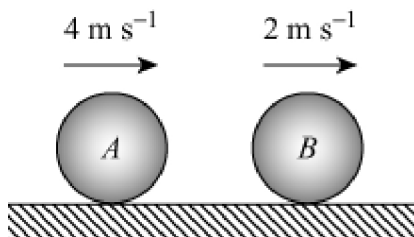
Heinemann Modular Maths for Edexcel AS and A-level

## 8 Momentum

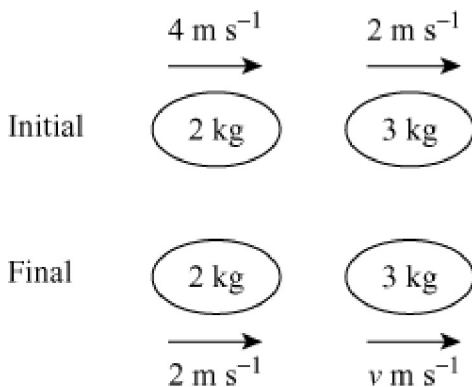
### Exercise A, Question 2

#### Question:

In the diagram  $A$  and  $B$  have masses 2 kg and 3 kg and move with initial velocities as shown. The collision reduces the velocity of  $A$  to  $2 \text{ m s}^{-1}$ . Find the velocity of  $B$  after the collision.



#### Solution:



Using conservation of momentum

$$\begin{aligned}
 4 \times 2 + 2 \times 3 &= 2 \times 2 + 3 \times v \\
 14 &= 4 + 3v \\
 10 &= 3v \\
 v &= 3 \frac{1}{3}
 \end{aligned}$$

$\therefore$  Velocity of  $B$  is  $3 \frac{1}{3} \text{ m s}^{-1}$ .