

# Solutionbank M1

Heinemann Modular Maths for Edexcel AS and A-level

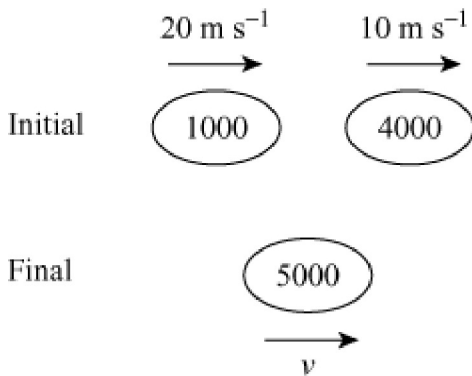
## 8 Momentum

### Exercise Test yourself, Question 1

#### Question:

A car, of mass 1000 kg, is travelling at  $20 \text{ m s}^{-1}$ , when it drives into a truck, of mass 4000 kg, which was moving at  $10 \text{ m s}^{-1}$  in the same direction. After the collision the two vehicles move together. Find the speed of the vehicles after the collision.

#### Solution:



Using conservation of momentum

$$1000 \times 20 + 4000 \times 10 = 5000v$$

$$v = 12$$

∴ Speed is  $12 \text{ m s}^{-1}$ .