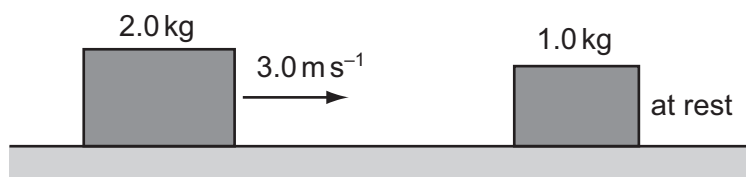


**10** Which of the following is a statement of the principle of conservation of momentum?

- A** In an elastic collision momentum is constant.
- B** Momentum is the product of mass and velocity.
- C** The force acting on a body is proportional to its rate of change of momentum.
- D** The momentum of an isolated system is constant.

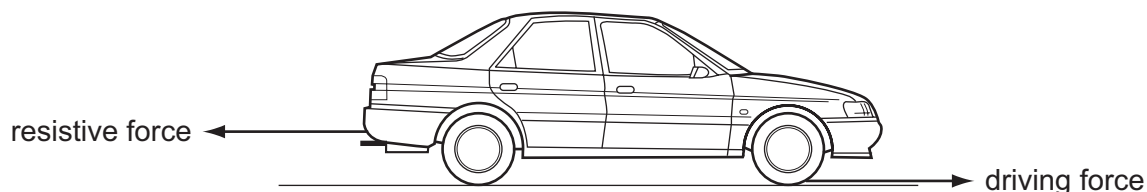
**11** A 2.0 kg mass travelling at  $3.0 \text{ m s}^{-1}$  on a frictionless surface collides head-on with a stationary 1.0 kg mass. The masses stick together on impact.



How much kinetic energy is lost on impact?

- A** zero
- B** 2.0 J
- C** 2.4 J
- D** 3.0 J

**12** A car of mass 750 kg has a horizontal driving force of 2.0 kN acting on it. It has a forward horizontal acceleration of  $2.0 \text{ m s}^{-2}$ .



What is the resistive force acting horizontally?

- A** 0.50 kN
- B** 1.5 kN
- C** 2.0 kN
- D** 3.5 kN

**Space for working**