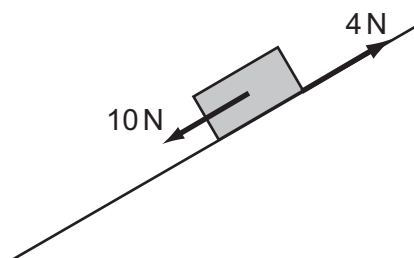


- 10 Two equal masses travel towards each other on a frictionless air track at speeds of  $60 \text{ cm s}^{-1}$  and  $40 \text{ cm s}^{-1}$ . They stick together on impact.



What is the speed of the masses after impact?

- A  $10 \text{ cm s}^{-1}$       B  $20 \text{ cm s}^{-1}$       C  $40 \text{ cm s}^{-1}$       D  $50 \text{ cm s}^{-1}$
- 11 A brick weighing  $20 \text{ N}$  rests on an inclined plane. The weight of the brick has a component of  $10 \text{ N}$  parallel with the plane. The brick also experiences a frictional force of  $4 \text{ N}$ .



What is the acceleration of the brick down the plane? Assume that the acceleration of free fall  $g$  is equal to  $10 \text{ m s}^{-2}$ .

- A  $0.3 \text{ m s}^{-2}$       B  $0.8 \text{ m s}^{-2}$       C  $3.0 \text{ m s}^{-2}$       D  $8.0 \text{ m s}^{-2}$

**Space for working**