

**7** A solid object of mass  $1.0\text{ kg}$  falls vertically downwards in a vacuum.

When the speed of the object is  $60\text{ m s}^{-1}$ , an additional constant force of  $50\text{ N}$  suddenly starts to act vertically upwards on the object.

What is the speed of the object  $2.0\text{ s}$  after the additional force starts to act?

**A**  $20\text{ m s}^{-1}$

**B**  $40\text{ m s}^{-1}$

**C**  $80\text{ m s}^{-1}$

**D**  $100\text{ m s}^{-1}$