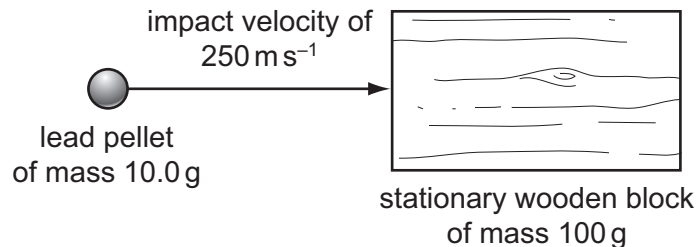


- 13** A lead pellet of mass  $10.0\text{ g}$  is shot horizontally into a stationary wooden block of mass  $100\text{ g}$ . The pellet hits the block with an impact velocity of  $250\text{ m s}^{-1}$ . It embeds itself in the block and it does not emerge.



What will be the speed of the block immediately after the pellet is embedded?

- A**  $23\text{ m s}^{-1}$       **B**  $25\text{ m s}^{-1}$       **C**  $75\text{ m s}^{-1}$       **D**  $79\text{ m s}^{-1}$

**Space for working**