

- 11 An isolated system consists of two bodies on which no external forces act. The two bodies collide with each other and stick together on impact.

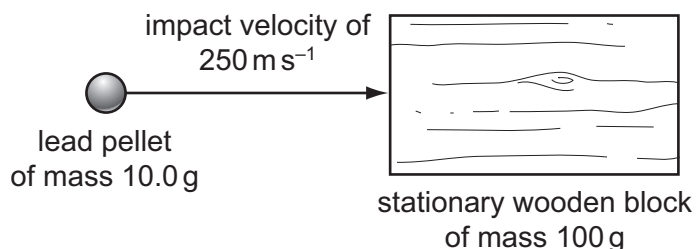
Which row correctly compares the total kinetic energy and the total momentum of the bodies before and after the collision?

	total kinetic energy before and after the collision	total momentum before and after the collision
A	different	different
B	different	the same
C	the same	different
D	the same	the same

- 12 A mass accelerates uniformly when the resultant force acting on it

- A** is zero.
- B** is constant but not zero.
- C** increases uniformly with respect to time.
- D** is proportional to the displacement from a fixed point.

- 13 A lead pellet of mass 10.0 g is shot horizontally into a stationary wooden block of mass 100 g. The pellet hits the block with an impact velocity of 250 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 m s^{-1}
- B** 25 m s^{-1}
- C** 75 m s^{-1}
- D** 79 m s^{-1}

Space for working