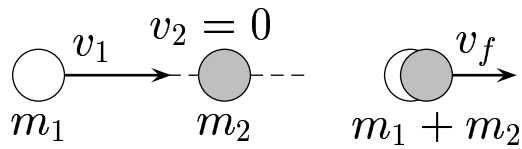


Mass m_1 collides head-on with m_2 . Initially $v_1, v_2 = 0$. $m_1 = m_2 = m$. After collision, m_1 and m_2 are stuck together.



before

after

Find v_f .

- A) $v_f = v_1$.
- B) $v_f = \frac{v_1}{2}$.
- C) $v_f = \frac{v_1}{3}$.

Conservation of momentum $m_1 v_1 + m_2 v_2 = (m_1 + m_2) v_f$, then $m v_1 = 2 m v_f$, or $v_f = \frac{v_1}{2}$.

Answer **B**.