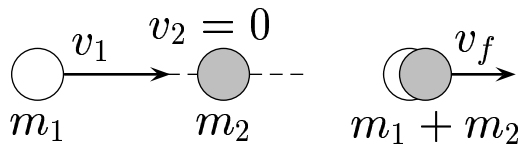
Mass m_1 collides head-on with m_2. Initially v_1, $v_2 = 0$. $m_1 = m_2 = m$. After collision, m_1 and m_2 are stuck together.



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 $v_f = \dfrac{v_1}{2}$.

Answer **B**.

09.04-01˙Perfectly˙Inelastic˙Collision 2004-3-24