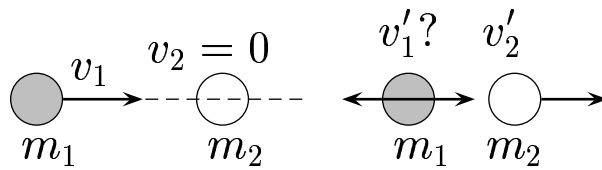


Given : A ball  $m_1$  is approaching  $m_2 = m_1$  with a speed  $v_1$ .



before

after

After an elastic collision, find the final velocities  $v_1'$  and  $v_2'$ .

- A)  $v_1' = \frac{v_0}{2}$       and       $v_2' = \frac{v_0}{2}$ .
- B)  $v_1' = \frac{v_0}{3}$       and       $v_2' = \frac{2v_0}{3}$ .
- C)  $v_1' = 0$       and       $v_2' = v_0$ .
- D)  $v_1' = \frac{-v_0}{2}$       and       $v_2' = \frac{3v_0}{2}$ .

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For all choices,  $P_i = m v_1 + m v_2 = P_f = m v_1' + m v_2'$ .

$K_i = \frac{m v_1^2}{2}$ . The answer must satisfy  $K_f = K_i$ .

Answer **C**.