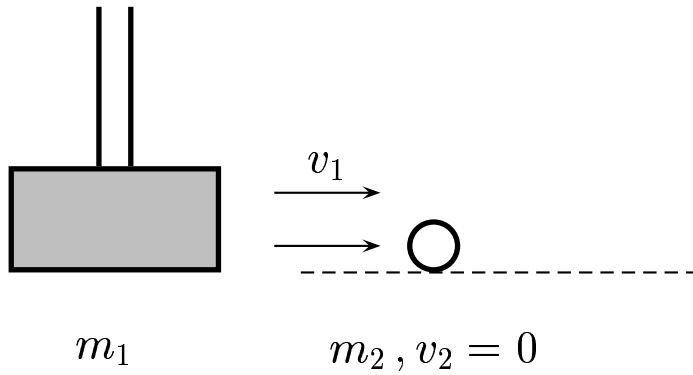


Given: A sledge hammer with mass $m_1 = 10$ kg is hitting a golf ball with a mass $m_2 = 10$ g. $v_1 = 10$ m/s, $v_2 = 0$. Assume: the collision is an elastic head-on collision.



Find the final speed of the golf ball.

- A) $v'_2 \simeq v_1 = 10$ m/s.
- B) $v'_2 \simeq 2v_1 = 20$ m/s.
- C) $v'_2 > 3v_1 = 30$ m/s.

With $v'_i = 2 v_{cm} - v_i$, $v_{cm} \simeq v_i = 10$ m/s, $v'_2 = 2 v_{cm} \simeq 2 v_1 = 20$ m/s.

Answer **B**.

09.04-05 Sledge and a Ball 2004-3-24