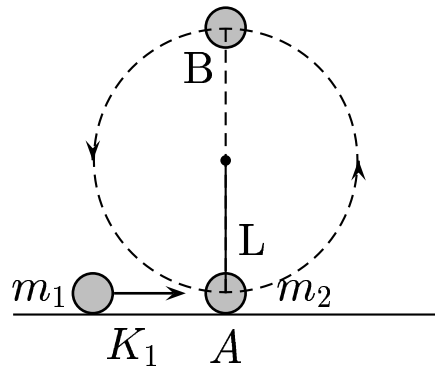


A mass  $m$  with initial kinetic energy  $K_1$  is colliding with another equally large  $m$ , a pendulum is suspended by a stiff rod of length  $L$ .



Determine the minimum value of  $K_1$ , so that  $m_2$  can barely pass by the top, point  $B$ .

- A)  $K_1 \geq \frac{3 m g L}{2}$ .
- B)  $K_1 \geq 2 m g L$ .
- C)  $K_1 \geq \frac{5 m g L}{2}$ .
- D)  $K_1 \geq 3 m g L$ .

$$K_A + U_A = K_B + U_B,$$

with  $K_B \simeq 0$ ,  $K_A = U_B - U_A = m g 2 L$ .

So the minimum value of  $K_1$  is  $2 m g L$ .

Answer **B**.