Two masses are connected by a light string passing over a light frictionless pulley. See figure. $m_2 > m_1$.

How much net potential energy of the system is released as the mass $m_2$ is dropped by a height $\frac{h}{2}$.

A) $U = m_2 g \frac{h}{2}$.

B) $U = (m_2 - m_1) g \frac{h}{2}$.

C) $U = m_1 g \frac{h}{2}$.
By inspection with a drop of $m_2$ by the amount of $\frac{h}{2}$, $m_1$ is raised by $\frac{h}{2}$.

The net potential energy release is $U = (m_2 - m_1) g \frac{h}{2}$.

Answer B.

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