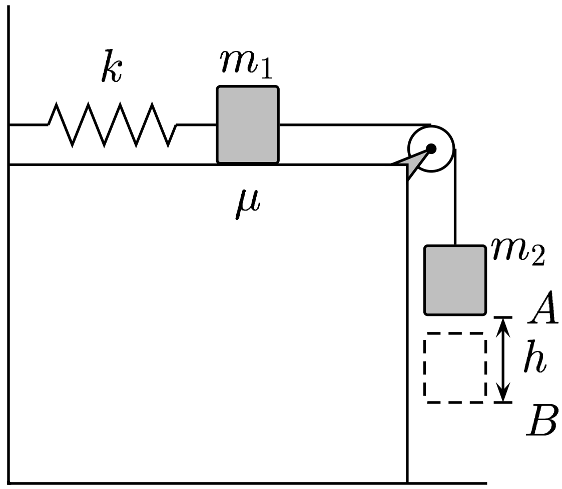

Given: k, m_1, m_2. When m_2 is at a position A, the spring is in its relaxed state. Release m_2 at A, m_1 is moving together with m_2 as m_2 is descending. m_2 stops at B.

The work energy relation from A to B leads to

A) $m_1\, g\, h = k\,\dfrac{h^2}{2} + \mu\, m_1\, g\, h\,.$

B) $m_2\, g\, h = k\,\dfrac{h^2}{2} + \mu\, m_1\, g\, h\,.$

C) $(\, m_1 + m_2\,)\, g\, h = k\,\dfrac{h^2}{2} + \mu\, m_1\, g\, h\,.$

$$(\, U_B^g - U_A^g\,) = m_2\, g\, h\,,$$

$$(\, U_B^{sp} - U_A^{sp}\,) = k\,\frac{h^2}{2}\,,$$

$$W_{AB}^{dis} = \mu\, m_1\, g\,.$$

Putting these terms together and rearranging lead to the expression $m_2\, g\, h = k\,\dfrac{h^2}{2} + \mu\, m_1\, g\, h\,.$

Answer **B**.

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