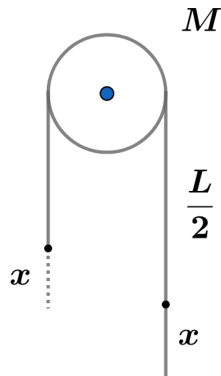


2019B F=ma Exam: Problem 24

Kevin S. Huang



Recall the acceleration of a simple Atwood machine is given by

$$a = \frac{m_1 - m_2}{m_1 + m_2} g$$

In this case, we have

$$m_1 = \frac{(L/2) + x}{L} M$$

$$m_2 = \frac{(L/2) - x}{L} M$$

so

$$a = \frac{2x}{L} g$$

and the answer is $\boxed{\text{E}}$.