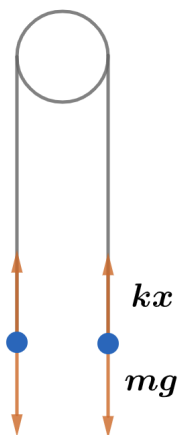


2020B F=ma Exam: Problem 9

Kevin S. Huang



Without loss of generality, the right mass is at rest so

$$kx = mg$$

where x is the extension of the string. Thus, the total length of the string is

$$l' = l + x = \boxed{l + \frac{mg}{k}}$$