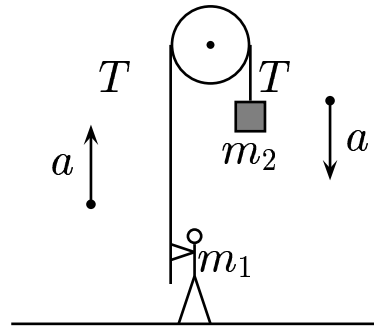


The mass of the worker  $m_1 = 50 \text{ kg}$  . The mass of the block at the end of the rope,  $m_2 = 100 \text{ kg}$  .



Determine the acceleration.

- A)  $a = \frac{m_2}{m_1} g = 2 g$
- B)  $a = \frac{m_2 - m_1}{m_1} g = g$
- C)  $a = \frac{m_2 - m_1}{m_1 + m_2} g = \frac{1}{3} g$

---

Applying “ $F = ma$ ” on the  $m_1 + m_2$  mass system.  
The net force is  $m_2 g - m_1 g = (m_1 + m_2)a$  . This leads to

$$a = \frac{m_2 - m_1}{m_1 + m_2} g = \frac{1}{3} g .$$

Answer **C**.