Problem: A mass $m_1 = 6.3$ kg rests on a frictionless table. It is connected by a massless and frictionless pulley to a second mass $m_2 = 3.2$ kg that hangs freely. What is the magnitude of the acceleration of block 1?

For $m_1$:

$$\begin{aligned} \vec{F}_{net} &= m\vec{a} \\ F_t &= m_1 a \end{aligned}$$

For $m_2$:

$$\begin{aligned} \vec{F}_{net} &= m\vec{a} \\ F_g - F_t &= m_2 a \\ F_t &= F_g - m_2 a \\ F_t &= m_2 g - m_2 a \end{aligned}$$

Putting them together (as $F_t$ is already in the same direction for both equations):

$$\begin{aligned} m_1 a &= m_2 g - m_2 a \\ m_1 a + m_2 a &= m_2 g \\ a &= \frac{m_2 g}{m_1 + m_2} \\ a &= \frac{(3.2\text{kg})(9.8\frac{\text{m}}{\text{s}^2})}{6.3\text{kg} + 3.2\text{kg}} \\ a &= 3.301\frac{\text{m}}{\text{s}^2} \end{aligned}$$