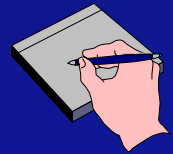


Pulley Example



- Two boxes are connected by a string over a frictionless pulley. Box 1 has mass 1.5 kg, box 2 has a mass of 2.5 kg. Box 2 starts from rest 0.8 meters above the table, how long does it take to hit the table.

• Compare the acceleration of boxes 1 and 2

A) $|a_1| > |a_2|$

B) $|a_1| = |a_2|$

C) $|a_1| < |a_2|$

1) $T - m_1 g = m_1 a_1$

2) $T - m_2 g = -m_2 a_1$

2) $T = m_2 g - m_2 a_1$

1) $m_2 g - m_2 a_1 - m_1 g = m_1 a_1$

$a_1 = (m_2 - m_1)g / (m_1 + m_2)$

