Answer to Question #52310 - Physics - Mechanics | Kinematics | Dynamics

Question

The block m1=1 kg sliding on a flat frictionless surface is connected by a string over a pulley to the hanging block m2=10kg. The system is released from the rest. Calculate the acceleration of the system

Solution

$$a_2 = a_1 = g = 9.81;$$

$$a_S = \frac{F_S}{m_F} = \frac{(m_2 - m_1)g}{m_2} = 0.9 \cdot 9.81 = 8.829 \frac{m}{s^2};$$

Answer: 8.829;