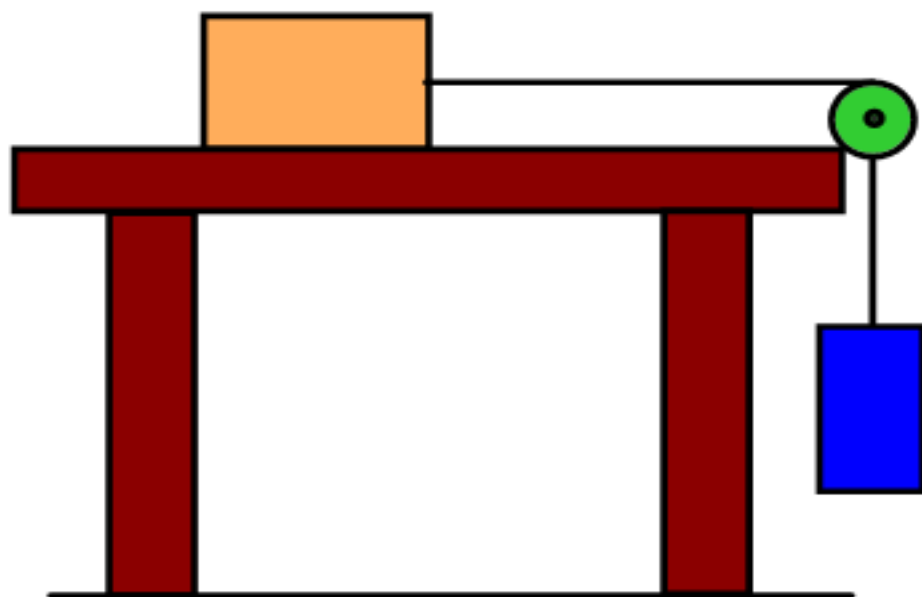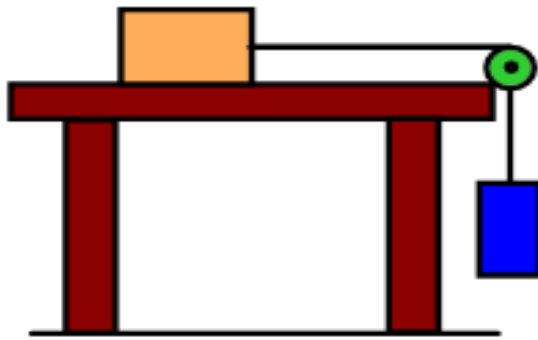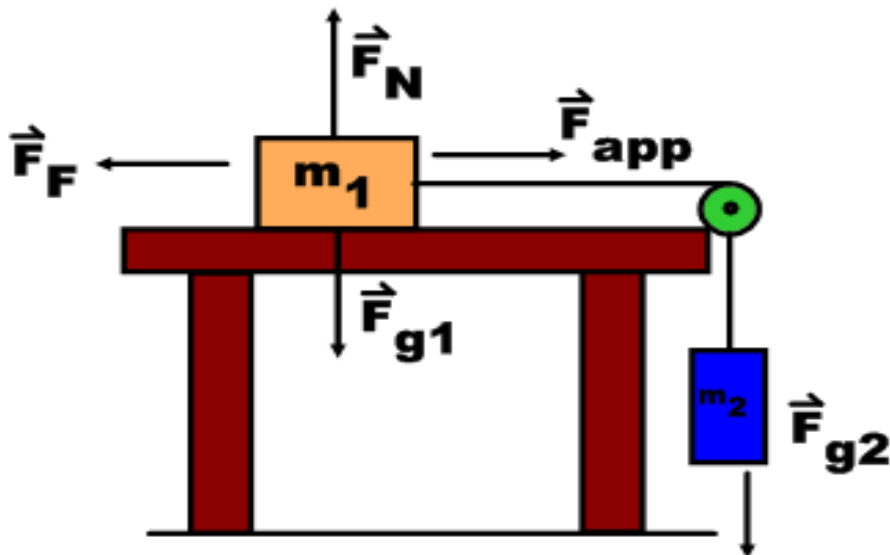# Fletcher's Trolley

& Other Problems

Fletcher's Trolley Conceptual Example

Imagine a block of mass m_1 attached to a weight of mass m_2 by a pulley system.

The first block slides on a table which can experience friction.

What does the free body diagram for this situation look like?

$$\vec{F}_{app} = -\vec{F}_{g2}$$

Where:

ex) In a Fletcher's trolley experiment, a block of mass 25 kg rests on a table ($\mu = 0.20$). The block is attached to another mass of 15 kg by a pulley. What is the acceleration of the system.

Step 1: Draw a diagram, label all forces.

Step 2: Calculate the forces of gravity, the normal force, the frictional force and the applied force.

ex) In a Fletcher's Trolley experiment, the second block has a mass of 5.00 kg. The force of friction acting on the second block is 14.0 N and the acceleration of the system is 2.90 m/s^2. What is the mass of the first block?