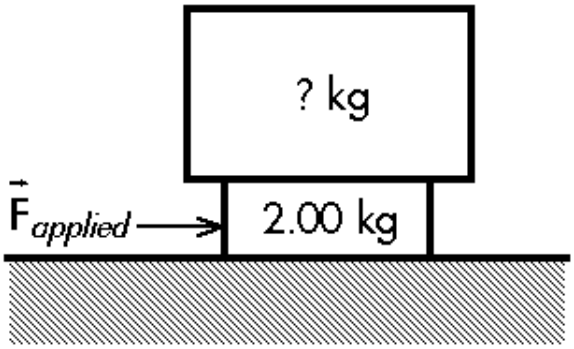
Stacked Boxes A horizontal force of $18.0N$ is required to keep a $2.00kg$ box moving across the floor at constant speed. A box of unknown mass is then stacked on top of the $2.00kg$ box. A horizontal force of $56.0N$, applied to the $2.00kg$ box, is required to keep both stacked boxes moving across the floor at constant speed. What is the mass of the unknown box? Show your work and explain your reasoning.



[0]Select problems may be modified from Walsh, Harrison, or the Internet.

Bucket A bucket with mass m_2 and a block with mass m_1 are hung on a pulley system. Find the magnitude of the acceleration with which the bucket and the block are moving and the magnitude of the tension force T by which the rope is stressed. Ignore the masses of the pulley system and the rope. The bucket moves up and the block moves down.