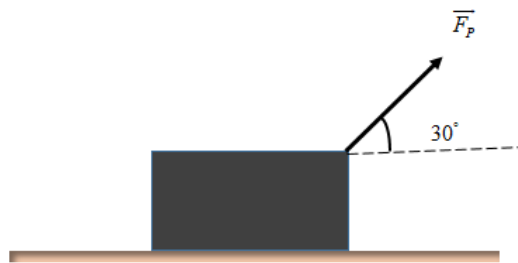


Test

Exercise 1:

A 10.0-kg box is pulled along a horizontal surface by a force of 40.0 N applied at a 30.0° angle above horizontal. We assume a coefficient of kinetic friction of $\mu_k = 0.3$.

Calculate the acceleration.



Exercise 2:

Two blocks connected by a rope of negligible mass are being dragged by a horizontal force (see Figure). Suppose $F = 68.0$ N, $m_1 = 12.0$ kg, $m_2 = 18.0$ kg, and the coefficient of kinetic friction between each block and the surface is $\mu_k = 0.1$.

(a) Draw a free-body diagram for each block.

Determine

(b) the acceleration of the system

(c) the tension T in the rope

