

Overcoming friction. Horizontal Force

1. A student pulls on a rope attached to a box of books and moves the box down the hallway. The student pulls with a horizontal force of 185 N. The box has a mass of 35.0 kg, and the coefficient of friction between the box and the floor is 0.27.
 - A. Make the FBD.
 - B. What Newton's law is true in the horizontal and vertical directions?
 - C. Write the expression for the net Forces in the horizontal and vertical directions.
 - D. Find the acceleration of the box.

2. A box of books weighing 325 N moves at a constant velocity across the floor when it is pushed with a force of 600 N exerted horizontally.
 - A. Make the FBD.
 - B. What Newton's law is true in the horizontal and vertical directions?
 - C. Write the expression for the net Forces in the horizontal and vertical directions.
 - D. Find μ_k between the box and the floor.