

**Forces and the  
Laws of Motion**

**HOLT PHYSICS**

# Diagram Skills

## *Changes in Motion*

A large, square box of exercise equipment sits on a storeroom floor. A rope is tied around the box. Assume that if the box moves along the floor, there is a backward force that resists its motion.

- Suppose that the box remains at rest. In the space provided, draw a free-body diagram for the box. Label each force involved in the diagram.

**1.**

- Suppose a warehouse worker moves the box by pulling the rope to the right horizontal to the ground. In the space provided, draw a free-body diagram for the box. Label each force involved in the diagram.

**2.**

- Suppose the warehouse worker moves the box by pulling the rope to the right at a  $50^\circ$  angle to the ground. In the space provided, draw a free-body diagram for the box. Label each force involved in the diagram.

**3.**