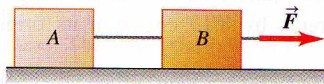


34. ●● Two crates connected by a rope of negligible mass lie on a horizontal surface. (See Figure 5.53.) Crate A has mass m_A and crate B has mass m_B . The coefficient of kinetic friction between each crate and the surface is μ_k . The crates are pulled to the right at a constant velocity of 3.20 cm/s by a horizontal force \vec{F} . In terms of m_A , m_B , and μ_k , calculate (a) the magnitude of the force \vec{F} and (b) the tension in the rope connecting the blocks. Include the free-body diagram or diagrams you used to determine each answer.



▲ **FIGURE 5.53** Problem 34.

35. ●● A hockey puck leaves a player's stick with a speed of 9.9 m/s and slides 32.0 m before coming to rest. Find the coefficient of friction between the puck and the ice.
54. ● You find that if you hang a 1.25 kg weight from a vertical spring, it stretches 3.75 cm. (a) What is the force constant of this spring in N/m? (b) How much mass should you hang from the spring so it will stretch by 8.13 cm from its original, unstretched length?
61. ● A light spring having a force constant of 125 N/m is used to pull a 9.50 kg sled on a horizontal frictionless ice rink. If the sled has an acceleration of 2.00 m/s^2 , by how much does the spring stretch if it pulls on the sled (a) horizontally, (b) at 30.0° above the horizontal?