2. The drawing shows a boat being pulled by two locomotives through a canal of length 2.00 km. The tension in each cable is $5.00 \times 10^3$ N, and $\theta = 20.0^\circ$. What is the net work done on the boat by the two locomotives?

![Diagram of a boat being pulled by two locomotives through a canal.]

14. Refer to Concept Simulation 6.1 at www.wiley.com/college/cutnell (select student companion site for the 6th Edition) for a review of the concepts with which this problem deals. A 0.075-kg arrow is fired horizontally. The bowstring exerts an average force of 65 N on the arrow over a distance of 0.90 m. With what speed does the arrow leave the bow?

34. A water-skier lets go of the tow rope upon leaving the end of a jump ramp at a speed of 14.0 m/s. As the drawing indicates, the skier has a speed of 13.0 m/s at the highest point of the jump. Ignoring air resistance, determine the skier’s height $H$ above the top of the ramp at the highest point. 34.

![Diagram of a water-skier leaving a jump ramp.]

48. A projectile of mass 0.750 kg is shot straight up with an initial speed of 18.0 m/s. (a) How high would it go if there were no air friction? (b) If the projectile rises to a maximum height of only 11.8 m, determine the magnitude of the average force due to air resistance.

![Diagram of a projectile being shot straight up.]