

29. ● A solid aluminum ingot weighs 89 N in air. (a) What is its volume? (See Table 13.1.) (b) The ingot is suspended from a rope and totally immersed in water. What is the tension in the rope (the *apparent* weight of the ingot in water)?
32. ●● An ore sample weighs 17.50 N in air. When the sample is suspended by a light cord and totally immersed in water, the tension in the cord is 11.20 N. Find the total volume and the density of the sample.
33. ●● A slab of ice floats on a freshwater lake. What minimum volume must the slab have for a 45.0 kg woman to be able to stand on it without getting her feet wet?
36. ●● (a) Calculate the buoyant force of air (density 1.20 kg/m^3) on a spherical party balloon that has a radius of 15.0 cm. (b) If the rubber of the balloon itself has a mass of 2.00 g and the balloon is filled with helium (density 0.166 kg/m^3), calculate the net upward force (the “lift”) that acts on it in air.