28. Figure 11.12 shows a mercury barometer. Consider two barometers, one using mercury and another using an unknown liquid. Suppose that the pressure above the liquid in each tube is maintained at the same value $P$, between zero and atmospheric pressure. The height of the unknown liquid is 16 times greater than the height of the mercury. Find the density of the unknown liquid.

32. In the hydraulic press used in a trash compactor, the radii of the input piston and the output plunger are $6.4 \times 10^{-3}$ m and $5.1 \times 10^{-2}$ m, respectively. The height difference between the input piston and the output piston is negligible. What force is applied to the trash when the input force is 330 N?

40. Only a small part of an iceberg protrudes above the water, while the bulk lies below the surface. The density of ice is 917 kg/m$^3$ and that of sweater is 1025 kg/m$^3$. Find the percentage of the iceberg's volume that lies below the surface.

50. Oil flowing with a speed of 1.22 m/s through a pipeline with a radius of 0.305 m. How many gallons of oil (1 gal = $3.79 \times 10^{-3}$ m$^3$) flow in one day?