

12. **REASONING** Pressure is the magnitude of the force applied perpendicularly to a surface divided by the area of the surface, according to Equation 11.3. The force magnitude, therefore, is equal to the pressure times the area.

SOLUTION According to Equation 11.3, we have

$$F = PA = (8.0 \times 10^4 \text{ lb/in.}^2)[(6.1 \text{ in.})(2.6 \text{ in.})] = \boxed{1.3 \times 10^6 \text{ lb}}$$