15.36. **Visualize:** Let d be the atmosphere's thickness, p the atmospheric pressure on the earth's surface, and p_0 (= 0 atm) the pressure beyond the earth's atmosphere.

Solve: The pressure at a depth d in a fluid is $p = p_0 + \rho g d$. This equation becomes

$$1 \text{ atm} = 0 \text{ atm} + \rho_{\text{air}} g d \Rightarrow d = \frac{1 \text{ atm}}{\rho_{\text{air}} g} = \frac{1.013 \times 10^5 \text{ Pa}}{\left(1.3 \text{ kg/m}^3\right)\left(9.8 \text{ m/s}^2\right)} = 7.95 \text{ km}$$