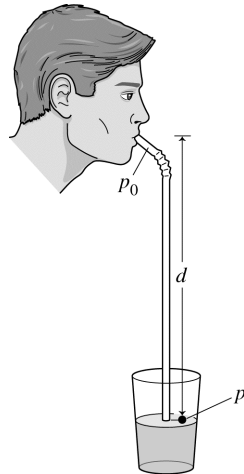


15.34. Visualize:



Solve: By sucking on the top and reducing the pressure, the straw is essentially a barometer. Atmospheric pressure pushes the liquid up the straw. The length of the longest straw can be obtained from the formula $p = p_0 + \rho g d$. If one could reduce the mouth pressure to zero, the length of the straw would be

$$1.013 \times 10^5 \text{ Pa} = 0 \text{ Pa} + (1000 \text{ kg/m}^3)(9.8 \text{ m/s}^2)d \Rightarrow d = 10.3 \text{ m}$$