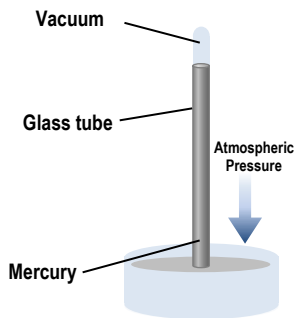


PRESSURE GAUGES: BAROMETER

- Pressure Gauges use height differences to calculate pressure $\rightarrow P_{\text{BOT}} = P_{\text{TOP}} + \rho gh$
 - Torricelli's classic barometer uses Mercury (Hg) because it is 13.6 times denser than water!



EXAMPLE: A classic barometer (as shown above) is built with a 1.0-m tall glass tube and filled with an unknown liquid.

- (a) The liquid goes 76 cm up the glass tube when the barometer is exposed to standard atmospheric pressure. What is the density of the unknown liquid?
- (b) When the same barometer, with the same liquid, is taken to a different location, the liquid goes 84 cm up the glass. What is the atmospheric pressure at this second location?

PRACTICE: BAROMETER / FIND ATMOSPHERIC PRESSURE

PRACTICE: A classic barometer (shown below) is built with a 1.0-m tall glass tube and filled with mercury ($13,600 \text{ kg/m}^3$). Calculate the atmospheric pressure (in atm) surrounding the barometer if the column of liquid is 76 cm high.

