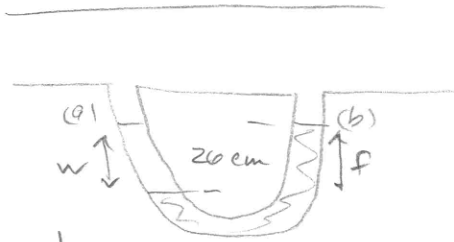
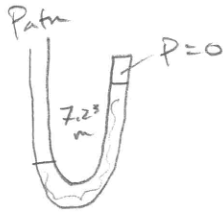


3.43



$$P_{atm} = 756 \text{ mm Hg} = \rho g h$$

$$= \rho \left(9.8 \frac{\text{m}}{\text{s}^2} \right) (7.23 \text{ m})$$

$$\therefore \rho = \frac{(756 \text{ mm Hg}) \left(\frac{1.01325 \times 10^5 \text{ N/m}^2}{760 \text{ mm Hg}} \right) \left(\frac{\text{kg}}{\text{m} \cdot \text{s}^2} \right)}{\left(9.81 \frac{\text{m}}{\text{s}^2} \right) (7.23 \text{ m})}$$

$$\rho = 1421 \text{ kg/m}^3$$

$$P_a + \rho_w g h = P_b + \rho_f g h \quad \text{or} \quad P_a - P_b = (\rho_f - \rho_w) g h$$

$$P_a - P_b = \left(1421 - 1000 \frac{\text{kg}}{\text{m}^3} \right) \left(9.81 \frac{\text{m}}{\text{s}^2} \right) \left(26 \times 10^{-2} \text{ m} \right) \left(\frac{760 \text{ mm Hg}}{1.01325 \times 10^5 \frac{\text{N}}{\text{m}^2}} \right) = \boxed{8.06 \text{ mm Hg}}$$

$$\text{or}$$

$$\frac{8.06 \text{ mm Hg}}{0.16} \text{ psi}$$