



Room TBA						
	М	Tu	W	Th	F	
8		Parker		Parker		
9						
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11						
noon	Dawson					
1		Parker		Parker		
2	Dawson		Dawson		Dawson	
3						
4						
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6						























Pressure Head Example

 Use Eq. 3.4-2 to calculate P_h for a column of Hg (SG = 13.6) that is equivalent to 1 atm.

 $P = \rho_{fluid}gP_h$ (P_h = head of fluid, units of height)

• Repeat the above calculation for H₂O.





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This is why we can have units such as mm Hg or ft H_2O for a pressure, even though this is not strictly a force per unit area!













Equipmet Ecyclopedia matrometers	Fluid 1 Density p_1 (ω) FIGURE 3.45 Manometer variables. FIGURE 3.45 Manometer variables. FIGURE 3.45 Manometer variables.
	The formula that relates the pressure difference $P_1 - P_2$ to the difference in manometer fluid levels is based on the principle that the fluid pressure must be the same at any two points at the same height in a continuous fluid. In particular, the pressure at the height of the lower surface of a manometer fluid is the same in both arms of the manometer. (See Figure 3.4.5, Writing and equating expressions for the pressure at points (a) and (b) in Figure 3.4.5 yields the general manometer equation: $\boxed{P_1 - P_1 gd_1 = P_2 + p_2 gd_2 + p_4 gh} \qquad (3.4-5)$ In a differential manometer, fluids 1 and 2 are the same, and consequently $p_1 = p_2 = p$. The general manometer equation: $\boxed{P_1 - P_2 = (p_1 - p)gh} \qquad (3.4-6)$ If either fluid 1 or 2 is a gas at a moderate pressure (e.g., if one arm is open to the atmosphere), the density of this fluid is 100 to 1000 times lower than the density of the manometer fluid, so that the corresponding pd term in Equation 3.4.5 may be neglected. If both fluids are gases, then the equation becomes $P_1 - P_2 = p_6 gh$ and if both P_1 and P_2 are expressed as heads of the manometer fluid, then $Manometer Formula for Gases:\boxed{P_1 - P_2 = h} \qquad (3.4-7)If P_2 is atmospheric pressure, then the gauge pressure at point 1 is simply the difference in thelevels of the manometer fluid.$





















