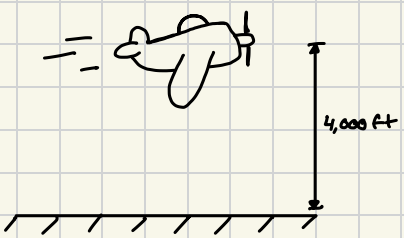
Homework #2

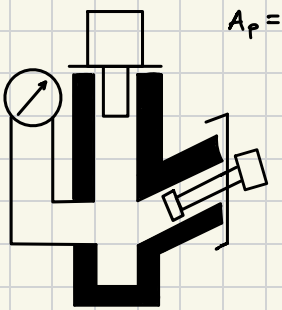
Problem 3.11

$\Delta P = \gamma h \rightarrow (.076\ ^{lb}/_{ft^3})4000\ ft$

$\Rightarrow$ **$\Delta p = 2.12$ psia**



Problem 3.14



$A_p = \frac{\pi}{4} d^2 \rightarrow \frac{\pi}{4}(3)^2 \Rightarrow A_p = .071\ in^2$

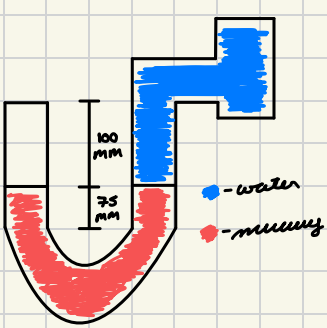
$P = F/A \rightarrow \frac{6(32.2)}{.071} \Rightarrow$ **$P = 2728.7$ psi**

Problem 3.62

$P_A = -((\rho_w \times g \times h_w) + (\rho_m \times g \times h_m))$

$\rightarrow -((100 \times 9.81 \times .1) + (13.54 \times 9.81 \times .075))$

$\Rightarrow$ **$P_A = -10.94$ kPa**



Problem 3.83

$$\frac{14.2\ \text{psia} \;/\; 1\ \text{in mercury}}{.4912\ \text{psia}} \rightarrow \boxed{28.9\ \text{in of mercury}}$$