

Measure Pair

$2(.15 \text{ cm}) = 9.7 \text{ cm}$

$V = \frac{4}{3}\pi (4.85 \text{ cm})^3$
 $= 478 \text{ cm}^3$

$M = .495 \text{ gm}$

$\rho_{\text{air}} = \frac{.495 \text{ gm}}{478 \text{ cm}^3}$
 $= .00104 \frac{\text{gm}}{\text{cm}^3}$
 $= \underline{\underline{1.04 \text{ kg/m}^3}}$

$\rho_{\text{air}}(P2) = .99 \text{ kg/m}^3$
 $\underline{1.0 \pm .06 \text{ kg/m}^3}$

Nov 2-8:26 AM

$\frac{\text{J}}{\text{Pa}} = \frac{\text{Nm/m}^2}{\text{N/m}^2}$

PV = nRT

$R = 8.314 \frac{\text{J}}{\text{mol} \cdot \text{K}}$

$P = 1 \text{ atm} = 760 \text{ Torr} = 101300 \text{ Pa}$
 $.816'' = 620'' = \underline{82640}$

1 mole gas @ 22°C = 295 K = T

$n = 1$

$V = \frac{nRT}{P} = \frac{(1 \text{ mole}) (8.314 \frac{\text{J}}{\text{mol} \cdot \text{K}}) (295 \text{ K})}{82640 \text{ Pa}}$

\downarrow
 $295 \text{ gm} = .0291 \text{ kg}$

$= .0297 \text{ m}^3$

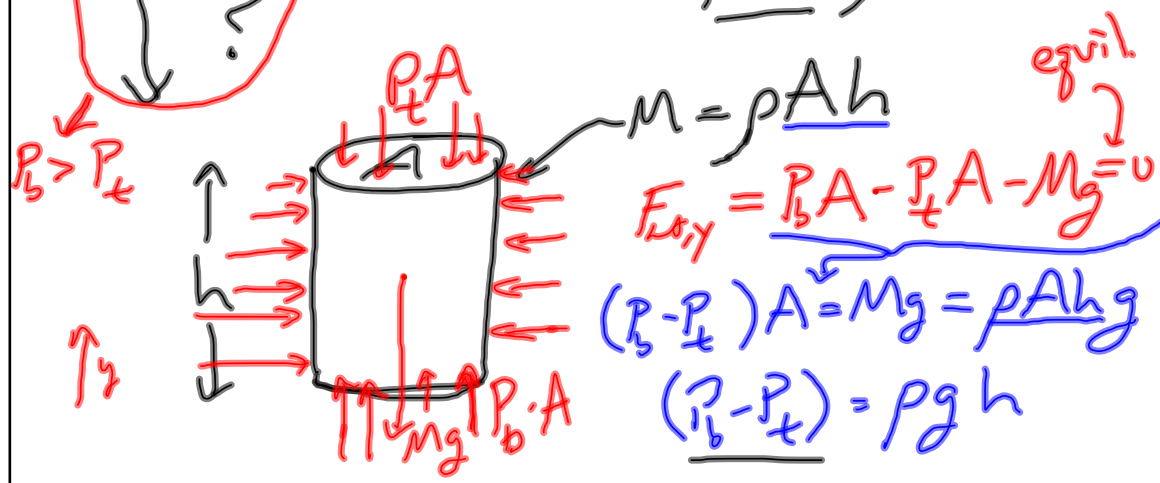
$\rho_{\text{air}} = \frac{M}{V} = \frac{.0291 \text{ kg}}{.0297 \text{ m}^3} = \underline{.98 \frac{\text{kg}}{\text{m}^3}}$

Nov 2-8:40 AM

Pressure $= \frac{F}{A} \sim Pa = \frac{N}{m^2}$

swim fluid $\Delta P \Delta$?

- gas - air, ...
- liquid - water, oil, ...
- plasma - fluorescent light, flame, sun



Nov 2-8:59 AM