

WORK IN SYMBOLIC FORM!

Note Title

$$P_A + \cancel{\gamma_w}(\cancel{h_4} + h_5) - \gamma_m h_5 - \cancel{\gamma_w}(h_1 + \cancel{h_2} + h_3 + \cancel{h_4}) + \cancel{\gamma_w} h_2 = P_B$$

$$P_A - P_B = -\gamma_w h_5 + \gamma_m h_5 + \gamma_w h_1 + \gamma_w h_3$$

$$\gamma_w = \rho g = 9800 \text{ N/m}^3$$

$$P_A - P_B = -9800 \text{ N/m}^3 (0.15 \text{ m}) + 13.6 (9800 \text{ N/m}^3) 0.15 \text{ m} \\ + 9800 \text{ N/m}^3 (0.35 \text{ m}) + 9800 \text{ N/m}^3 (0.18 \text{ m})$$

$$= 23716 \text{ Pa} = \underline{23.7 \text{ kPa}} \quad \text{ANS}$$

Example: Calculate the pressure difference, $P_A - P_B$.

