

P #44

Ch 9 - pg 298

$$\rho_1 = \rho_2 = 1.29 \text{ kg/m}^3$$

$$v_1 = .15 \text{ m/s}$$

$$v_2 = 2 \cdot v_1 = .30 \text{ m/s}$$

$$P_1 + \cancel{\rho \cdot g \cdot y_1} + \frac{1}{2} \rho \cdot v_1^2 = P_2 + \cancel{\rho \cdot g \cdot y_2} + \frac{1}{2} \rho \cdot v_2^2$$

$$P_1 + \frac{1}{2} (1.29 \text{ kg/m}^3) \cdot (.15 \text{ m/s})^2 = P_2 + \frac{1}{2} (1.29 \text{ kg/m}^3) \cdot (.30 \text{ m/s})^2$$

$$P_1 + .0145 = P_2 + .058$$

$$P_1 - P_2 = .058 - .0145$$

$$\Delta P = .0435 \text{ Pa}$$