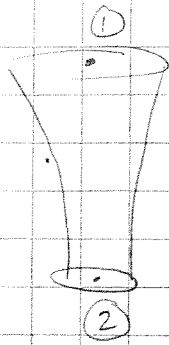


$$v_1 = .25 \text{ m/s}$$

$$r_1 = 2 \cdot r_2$$



Find v_2 :

$$A_1 \cdot v_1 = A_2 \cdot v_2$$

$$(\pi r_1^2) \cdot v_1 = (\pi r_2^2) \cdot v_2$$

$$(\pi \cdot (2r_2)^2) \cdot v_1 = (\pi \cdot r_2^2) \cdot v_2$$

$$\pi \cdot 4 \cdot r_2^2 \cdot v_1 = \pi \cdot r_2^2 \cdot v_2$$

$$v_2 = 4 \cdot v_1 = 4 \cdot (.25 \text{ m/s})$$

$$v_2 = 1 \text{ m/s}$$

Find h_1 :

$$v_1 = .25 \text{ m/s}$$

$$v_2 = 1.0 \text{ m/s}$$

$$h_2 = 0$$

$$P_1 = P_2 = \text{atm. pressure}$$

$$P_1 + \rho \cdot g \cdot h_1 + \frac{1}{2} \cdot \rho \cdot v_1^2 = P_2 + \rho \cdot g \cdot h_2 + \frac{1}{2} \cdot \rho \cdot v_2^2$$

$$(1000 \text{ kg/m}^3) \cdot (9.8 \text{ m/s}^2) \cdot h_1 + \frac{1}{2} \cdot (1000 \text{ kg/m}^3) \cdot (.25 \text{ m/s})^2 = 0 + \frac{1}{2} \cdot (1000 \text{ kg/m}^3) \cdot (1.0 \text{ m/s})^2$$

$$h_1 = .048 \text{ m}$$