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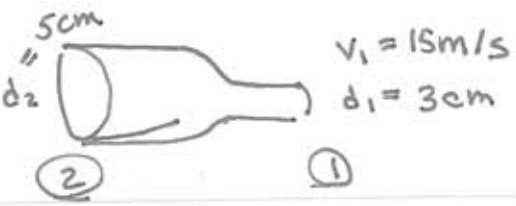

$$A_1 v_1 = \pi (.015)^2 (15) = .0106 \frac{m^3}{s}$$

amount = rate * time

$$\text{amount} = .0106 \frac{m^3}{s} (10 min) \times \left(\frac{60 s}{min}\right) = \underline{6.36 m^3}.$$

$$A_1 v_1 = A_2 v_2$$

$$\pi (.015)^2 (15) = \pi (.025)^2 v_2$$

$$v_2 = \frac{(.015)^2 (15)}{(.025)^2} = \underline{5.4 m/s}$$

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

($h_1 = 0$, $h_2 = 0$)

$$P_{air} + \tfrac{1}{2}(1000) 15^2 = P_{air} + P_{gauge} + \tfrac{1}{2}(1000)(5.4)^2$$

$$P_{gauge} = \tfrac{1}{2}(1000) 15^2 - \tfrac{1}{2}(1000)(5.4)^2$$

$$\underline{97920 \text{ Pascal}}$$