55. The inside diameters of the larger portions of the horizontal pipe depicted in Figure P9.55 are 2.50 cm. Water flows to the right at a rate of $1.80 \times 10^{-4}$ m$^3$/s. Determine the inside diameter of the constriction.

Step 1: Find $v_1$.

Flow rate = $1.8 \times 10^{-4}$ m$^3$/s

- 1.037 m/s
- 2.074 m/s
- 3.15 m/s

Diameter = 2.5 cm

Step 2:

P1 is pressure at blue dot
P2 is pressure at red dot
What are P1 and P2?

1. $P_{atm}$ and $P_{atm}$
2. $P_{atm} + \rho g h_1$ and $P_{atm} + \rho g h_2$
3. $\rho g h_1$ and $\rho g h_2$