

45. (a) The equation of continuity leads to

$$v_2 A_2 = v_1 A_1 \implies v_2 = v_1 \left(\frac{r_1^2}{r_2^2} \right)$$

which gives $v_2 = 3.9 \text{ m/s}$.

- (b) With $h = 7.6 \text{ m}$ and $p_1 = 1.7 \times 10^5 \text{ Pa}$, Bernoulli's equation reduces to

$$p_2 = p_1 - \rho gh + \frac{1}{2} \rho (v_1^2 - v_2^2) = 8.8 \times 10^4 \text{ Pa} .$$