

42. (a) The equation of continuity provides $26 + 19 + 11 = 56$ L/min for the flow rate in the main (1.9 cm diameter) pipe.
- (b) Using $v = R/A$ and $A = \pi d^2/4$, we set up ratios:

$$\frac{v_{56}}{v_{26}} = \frac{\frac{56}{\pi(1.9)^2/4}}{\frac{26}{\pi(1.3)^2/4}} \approx 1 .$$