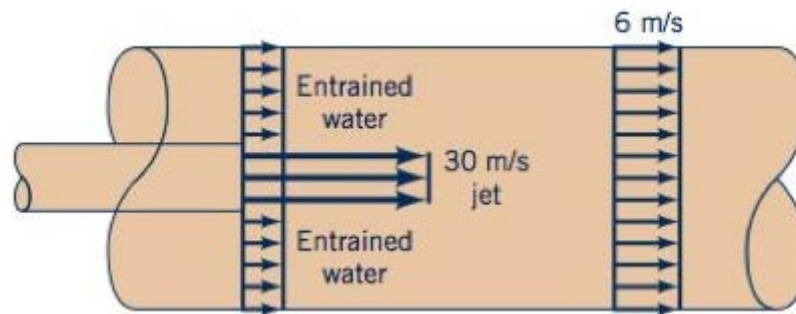


October 16, 2013

NAME

Fluids-ID

Quiz 6. A water jet pump (See figure) involves a jet cross sectional area of  $0.01 \text{ m}^2$ , and a jet velocity of  $30 \text{ m/s}$ . The jet is surrounded by entrained water. The total cross-sectional area associated with the jet and entrained streams is  $0.075 \text{ m}^2$ . These two fluid streams leave the pump thoroughly mixed with an average velocity of  $6 \text{ m/s}$  through a cross-sectional area of  $0.075 \text{ m}^2$ . Determine the pumping rate (i.e. the entrained fluid flowrate) involved in  $\text{m}^3/\text{s}$ .



Note: Attendance (+2 points), format (+1 point)