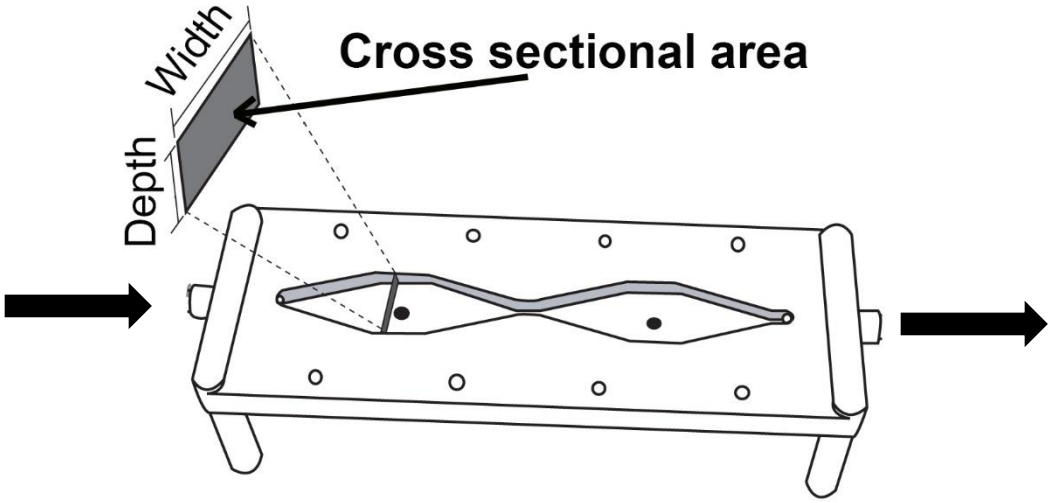
Name: _____ Date: _____ Course: _____ Professor: _____

F9a Prelab (1007): Fluid Mechanics & Bernoulli's Principle

Read the lab instructions before answering questions

1) During your experiment, you will have air flowing at a constant flow rate through four different sized ports in a chamber as shown in the picture.



Calculate the cross sectional area for port #1 if its dimension are:
Width = 6.2160 x 10^{-3} m
Depth = 7.0260 x 10^{-3} m

2) The relationship between Flow Rate (*R*), Cross Sectional Area (*A*) and Velocity (*v*) is called the Continuity equation: $R = Av$

Use the area from question 1 to calculate the velocity of the air at port #1 if the air is flowing at a rate of $R = 0.0010366 \frac{m^3}{s}$.