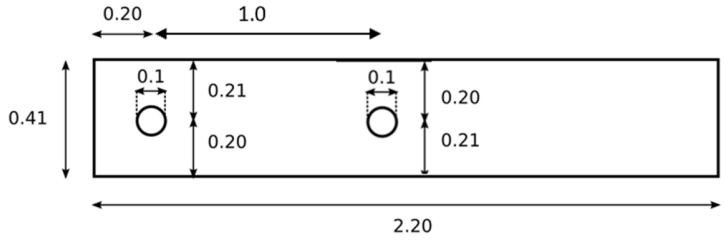
Homework 4

Consider a Stokes flow with constant viscosity ν =0.001, passing two infinite cylinders.



The inflow profile on the left side is $\boldsymbol{u}(x,y) = \begin{pmatrix} 1.5\frac{4y(y-0.41)}{0.41^2} \\ 0 \end{pmatrix}$, and assume zero velocity on the top and bottom sides. Pick an appropriate value for outflow profile on the right side.

Assess your solver's performance on a sequence of grids. Plot the velocity and pressure fields. Comment the results.