

ACFD 2018 HW1 solution

Task 1 Temperature

contour-1
Static Temperature

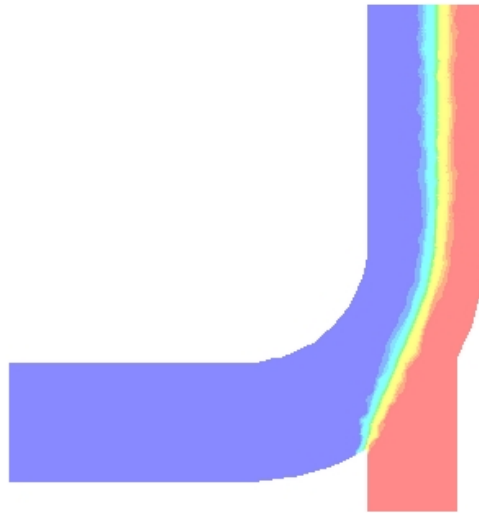
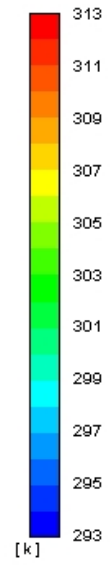


FIG. 1



Velocity magnitude

contour-1
Velocity Magnitude

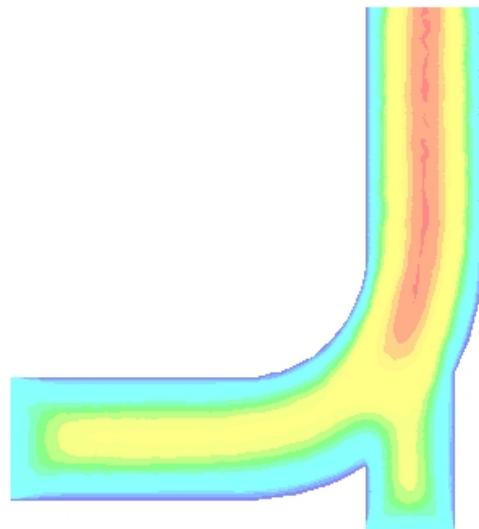
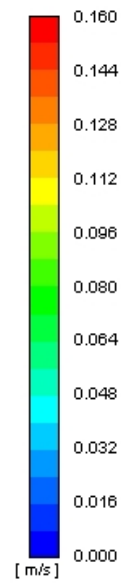
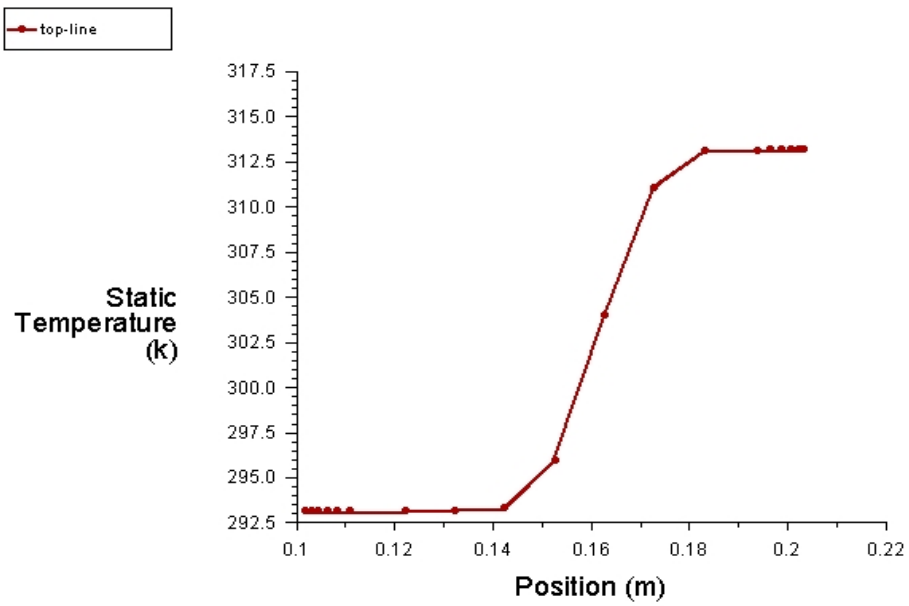


FIG. 2

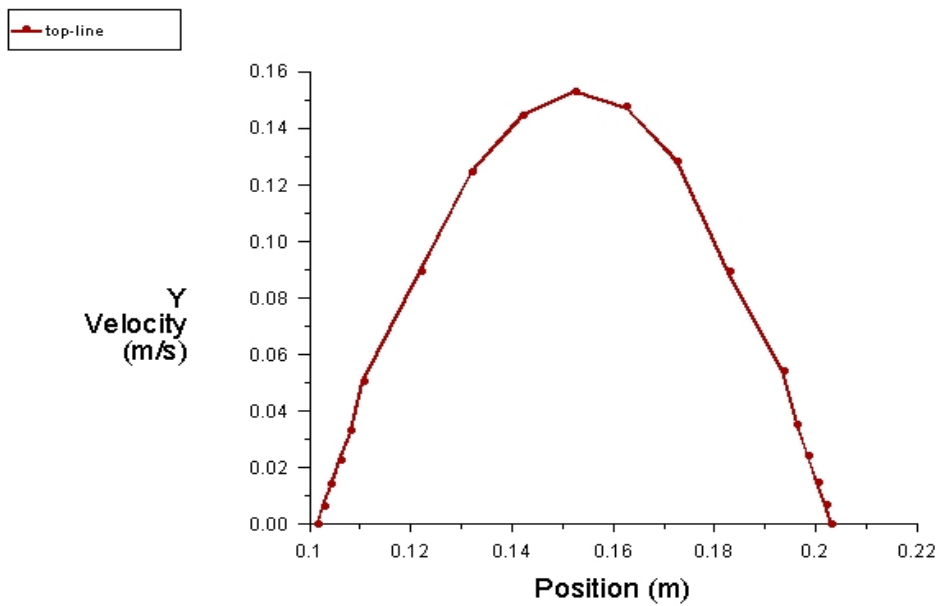


Task 2

Temperature



y-velocity



Task 3

Large inlet $H_1 = 96846.8$ (unit in W)

Small inlet $H_2 = 57891.7$

$H_1 + H_2 = 154783.5$

Outlet $H_3 = 154338.1$ Discrepancy between inlet and outlet energy flux is about 0.26 %

Note: The results may vary slightly with the choice of mesh. For the reference, the mesh we used to produce the solution is shown below. (The plot of mesh is not a required deliverable.)

