

# Introduction to CFD Assignment 3 — Grid Generation

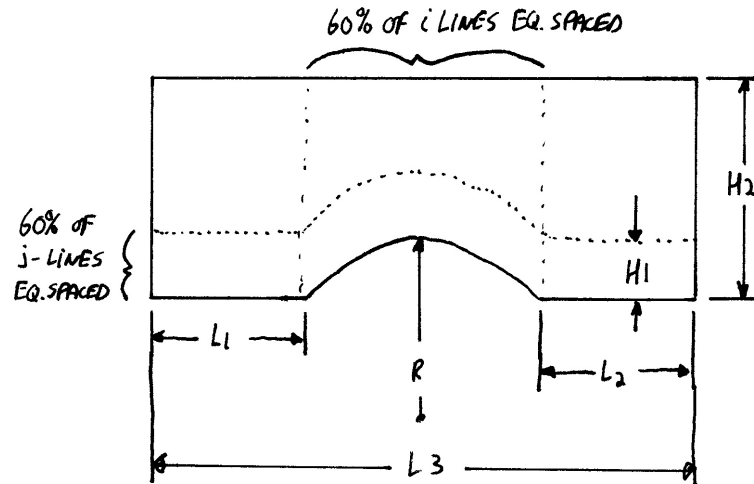
## Instructions

When answering questions in this assignment, please generate the mesh using the warp code on the INTROCFD server to make sure that your grid is generated correctly. For each problem proceed as follows:

1. Outline clearly the strategy used.
2. When building the mesh, make sure that the grid spacing does not vary abruptly at any location.
3. Once the grid looks fine when viewed in GNUPLOT, then print out the part of the control.wrp that is related to grid generation.
4. Print out the grid as seen in the gnuplot window.

## Question #1

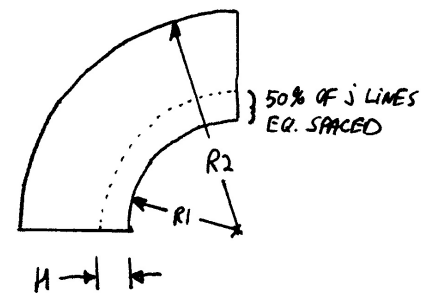
Create a mesh for a bump in a channel as follows:



The mesh should have 70 grid lines along  $i$  and 70 grid lines along  $j$  with  $L_1 = 0.3$  m,  $L_2 = 0.3$  m,  $L_3 = 1.0$  m,  $R = 0.7$  m,  $H_1 = 0.1$  m, and  $H_2 = 0.5$  m.

## Question #2

Grid the following quarter circle with 70 grid lines along  $i$  and 90 grid lines along  $j$ :



with  $R_1 = 1$  m,  $R_2 = 2$  m and  $H = 0.1$  m. Make sure that the grid is uniformly-spaced along  $i$ .

**Due on Thursday April 5th at 16:30.**