ISTANBUL TECHNICAL UNIVERSITY
DEPARTMENT OF MECHANICAL ENGINEERING

# NUMERICAL METHODS IN FLUID FLOW AND HEAT TRANSFER

## MIA 502E

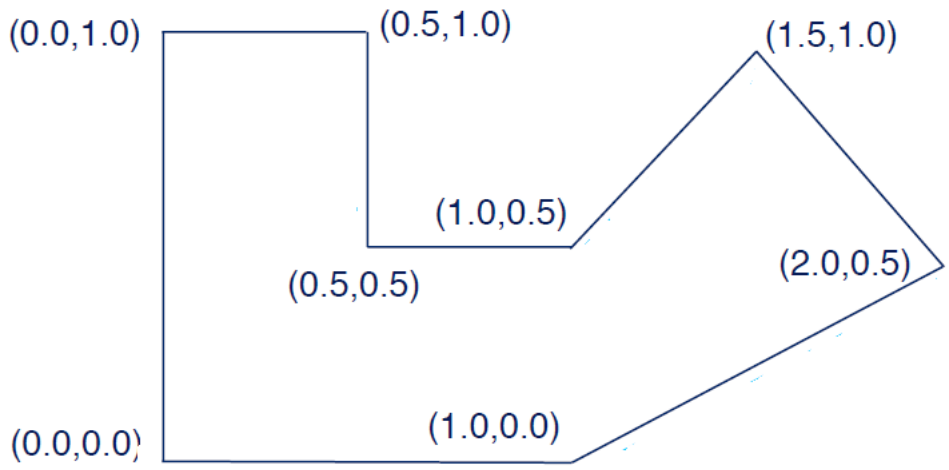
## SPRING 2019

## Homework 5

## due to May, the 31st

## Question 1 (50p)

For the given 2D domain obtain a grid by **elliptic grid generation**.




## Question 2 (50p)

On the grid solve the stream function equation with the prescribed boundary conditions. Solve the equation for ω = 0, -1, +1.

$$\frac{\partial^2 \psi}{\partial x^2} + \frac{\partial^2 \psi}{\partial y^2} = \omega$$