

# Lab 2

These are just exercises, do not hand them in as homework.

1. For tutorial step-3:
  - (a) Follow the instructions in “Modify the type of boundary condition” in the description of the tutorial.
  - (b) Now also do “A slight variation of the last point” but use the value -0.5 for the boundary with indicator 1.
  - (c) Change the setup in b) to have  $f = 0$ .
  - (d) Switch to an L-shaped domain, experiment with a combination of Dirichlet and Neumann boundary conditions.
  - (e) Bonus: Do “Convergence of the mean”. Can you see the order  $h^2$ ? Increase the polynomial order (you need to increase all orders of the quadratures in the program!) and check the convergence of the mean now.