DN2255: Exercise 1 – Reference solution plots

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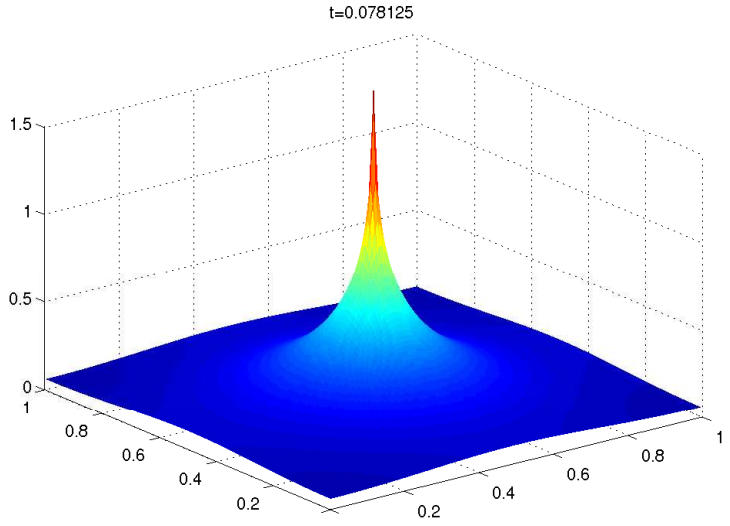
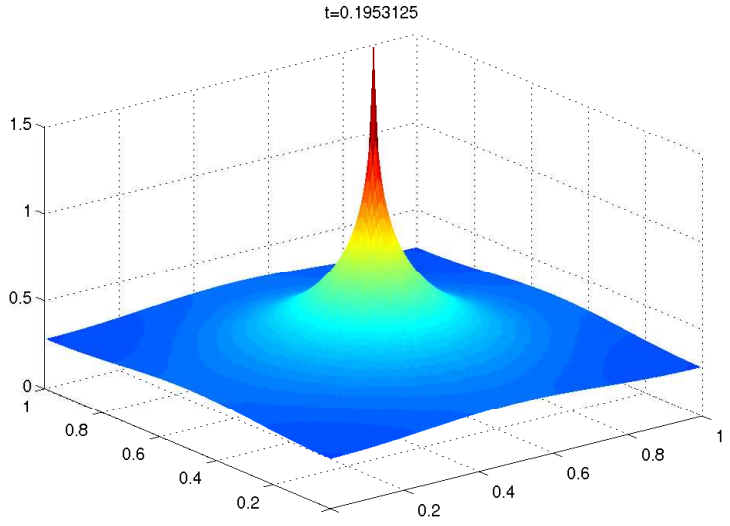
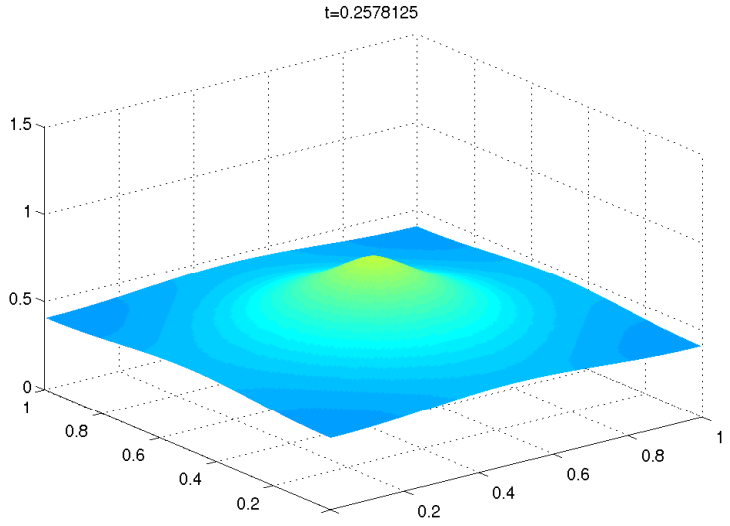
Here we show some plots for the temperature distribution, so that you may verify that your program works in task 2.4.

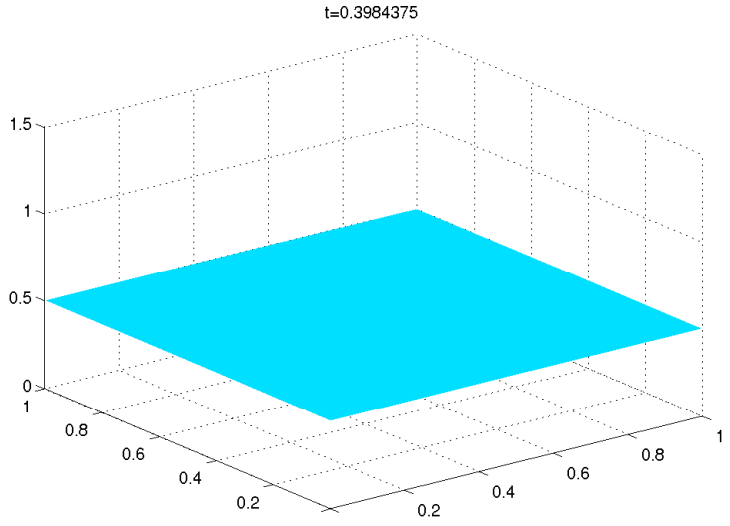
NOTE the scaling of the z-axis! It is a common mistake to multiply with one too many factors of Δx, Δy or Δt in the discretization of the PDE and get a surface that has the right shape, but the wrong range. For the steady state you should get $q(x, y, t \to \infty) = 0.5$.

Small suggestion Use the `caxis` command in Matlab to get consistent color mapping between plots, i.e. so that red corresponds to some fixed value instead of being scaled depending on data.


t=0.078125
1.5
1
0.5
0
1
0.8
0.6
0.4
0.2
0.2
0.4
0.6
0.8
1


t=0.1953125
1.5
1
0.5
0
1
0.8
0.6
0.4
0.2
0.2
0.4
0.6
0.8
1


t=0.2578125
1.5
1
0.5
0
1
0.8
0.6
0.4
0.2
0.2
0.4
0.6
0.8
1


t=0.3984375
1.5
1
0.5
0
1
0.8
0.6
0.4
0.2
0.2
0.4
0.6
0.8
1