
Dr. Leon VanDommelen (11/07/19) 3

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IMPORTANT:

Do not change **anything** in this header (besides your name and exam date above as needed)!

Put your solution to the question completely at the end of this file.

EXAM 2, Question 3

```
if ~exist('__code__', 'var') ; clear ; end
format compact
more off
```

SOLUTION:

```
% set the number of grid points in each direction
n=11
m=11

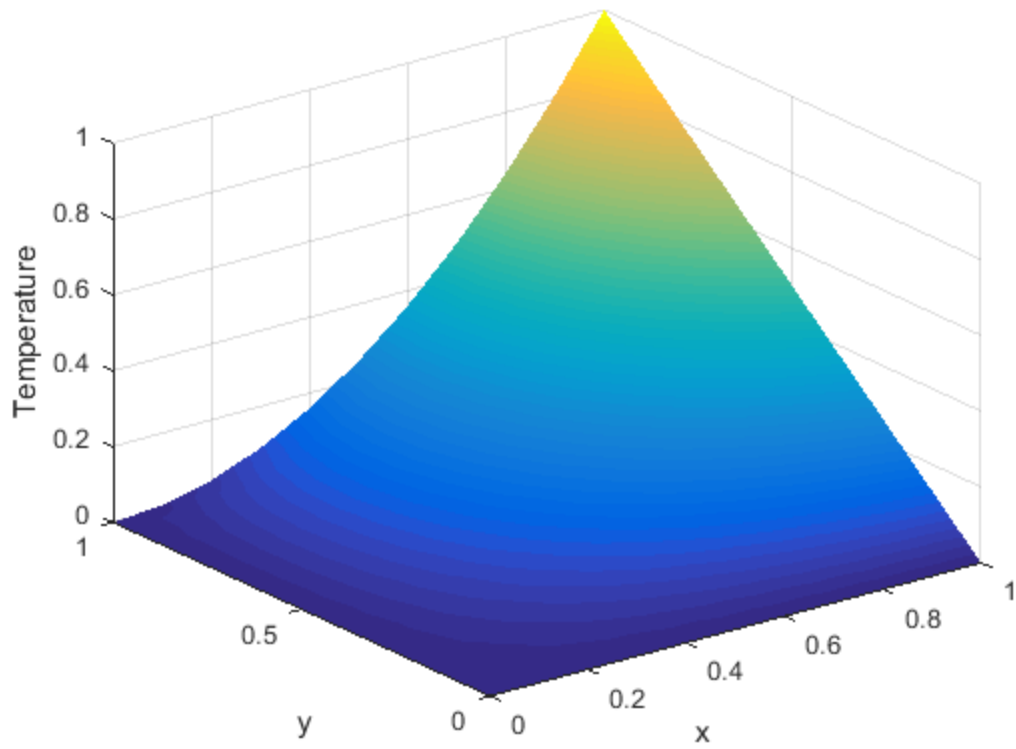
% create the grid
xVals=linspace(0,1,n);
yVals=linspace(0,1,m);
[xGrid yGrid]=meshgrid(xVals,yVals);

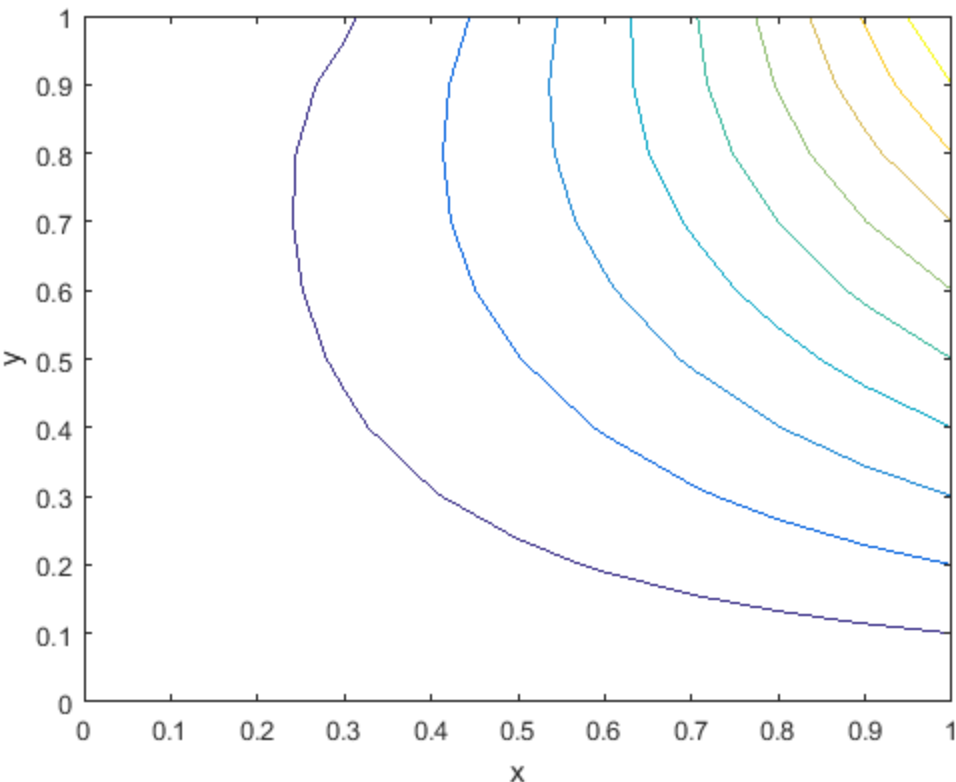
% create the temperature values on the grid
forcing=zeros(m,n);
forcing(m,:)=xVals.^2;
forcing(:,n)=yVals;
TGrid=SimplePoisson(xVals,yVals,forcing);

% plot the surface
figure(1)
surf(xGrid,yGrid,TGrid)
shading interp
xlabel('x')
ylabel('y')
zlabel('Temperature')

% plot contour lines
figure(2)
contour(xGrid,yGrid,TGrid,[0.1:0.1:0.9])
xlabel('x')
ylabel('y')
```

```
n =  
    11  
m =  
    11  
n =  
    11  
m =  
    11  
N =  
   121  
Warning: Using CONDEST instead of COND for sparse matrix.  
solRelerrDueToMatlab =  
    6.8973e-13
```





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