ME 24-731
Conduction and Radiation Heat Transfer

Assignment No: 4
Due Date: March 7, 2000
Spring 2000
Instructor: J. Murthy

1. Problem 3.3 from Patankar
2. Problem 4.8 from Patankar
3. Problem 4.20 from Patankar
4. Consider two-dimensional steady conduction in a square domain, as shown in Figure 1. There is a heat generation term in the shaded region, which forms the lower right hand quarter of the domain. The thermal conductivity varies linearly with temperature everywhere in the domain. Write a computer program to solve for the temperature distribution in the domain. Use 20x20 cells. Plot the temperature along the horizontal and vertical centerlines. Show the discretization equations and the plots. There is no need to submit the program itself.

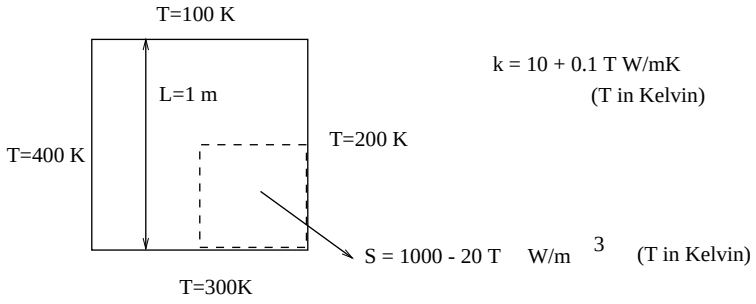

Figure 1: Domain for Problem 4