

Homework for Math 110
Introduction to PDE
Fall 2006

Due Friday December 1st:

- Section 6.1: 5, 9.
- Section 6.2: 3, (*skip* problem 4 and see below).
- Section 6.3: 2, 3.

Replacement for problem 4 of the text. Please study this, but you *do not* have to hand it in:

Problem: Solve the Laplace equation $\Delta u = 0$ in the rectangle $0 < x < 2$ and $0 < y < 1$, with the following continuous boundary conditions:

$$\begin{aligned} u(x, 0) &= x + \sin\left(\frac{\pi}{2}x\right), & u(x, 1) &= 0, \\ u(0, y) &= 0, & u(2, y) &= 2(1 - y). \end{aligned}$$