

Math 413, Fall 2010
Homework 3. Due Friday 10/22/10

Part I. Do the following problems from Holmes textbook: 2.11, 2.17, 2.23

Part II. Assume a boundary layer at $x = 0$ and find solution to the following boundary value problem by singular perturbation method:

$$\begin{cases} \epsilon y'' + y' = 2x, & 0 < x < 1, \quad 0 < \epsilon \ll 1, \\ y(0) = 1, y(1) = 1 \end{cases}$$