

University of Massachusetts - Amherst
Department of Civil & Environmental Engineering
CEE 630: Advanced Solid Mechanics (Fall 2009)

Homework #4: Due October 15

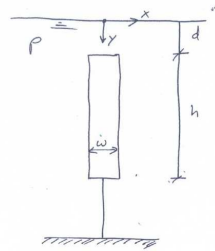
Problem 1: 3.6 Note that the plate is free to slide relative to the top and bottom walls. Solve using a stress function approach.

Problem 2: 3.14

Problem 3: Consider a tall, bouyant, rectangular body of height h , width w , and thickness t , submerged in a fluid of density ρ with a coordinate system defined in the figure below. Note that the body is tethered to the bottom, and that this tether exerts a downward force on the body. You may neglect the mass of the body itself in this problem.

(a) write down the traction boundary conditions for the body

(b) using these boundary conditions and your intuition about how stresses vary in the body, determine a stress function that gives the state of stress in the body and satisfies the compatibility equation.



Problem 4: Approximately how many hours did you spend on this assignment?