

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DEPARTMENT OF OCEAN ENGINEERING

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

13.10J/1.573J STRUCTURAL MECHANICS

Fall 2002

Problem Set 3

Due in: One week

Problems from Chapter 3, Chapter 15 and Chapter 16 of the textbook:

- (a) Problem 3.8
- (b) Problem 3.16
- (c) Problem 15.12
- (d) Problem 15.15
- (e) Problem 15.20
- (f) Problem 16.9

Please derive principal stresses and directions at that point.

- (g) Problem 16.18

For the equations derived in 16.18 verify the compatibility of the displacement field and strains in the problem 16.9.

Please give key steps and figures in the solution. Otherwise, you cannot get the full score.

This Problem Set is worth 28 points.