ME5339

HOMEWORK SET NO. 6

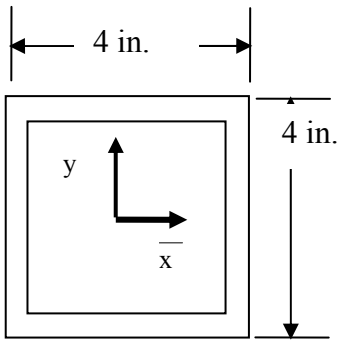
Due Exam time (March 13, 2008)
No late submission will be allowed.
Do each problem in a separate paper.
Only one will be required to turn in at the exam time.

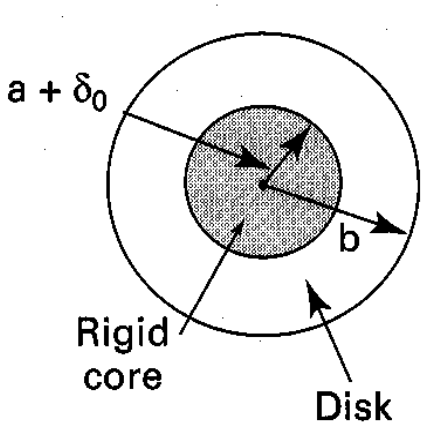
WORK INDEPENDENTLY!

Problem 6-1

A squared cross-section beam with an edge, *4 inches* and thickness of 0.1 inch is subjected to a torque, T=100 in-lb. Using Prandle stress function to determine :

a) The shear stresses τ_{xy}, τ_{yz}, τ_{xz} at the point (2,2)
b) The polar moment of inertia, ***J***
c) The twist angle





Problem 6-2

A thin circular disk of inner radius *a* and outer radius *b* is shrunk onto a rigid plug of radius $a+\delta_0$ (see the figure above). Determine

a) the interface pressure
b) the radius and tangential stresses