2.094

FINITE ELEMENT ANALYSIS OF SOLIDS AND FLUIDS

SPRING 2008

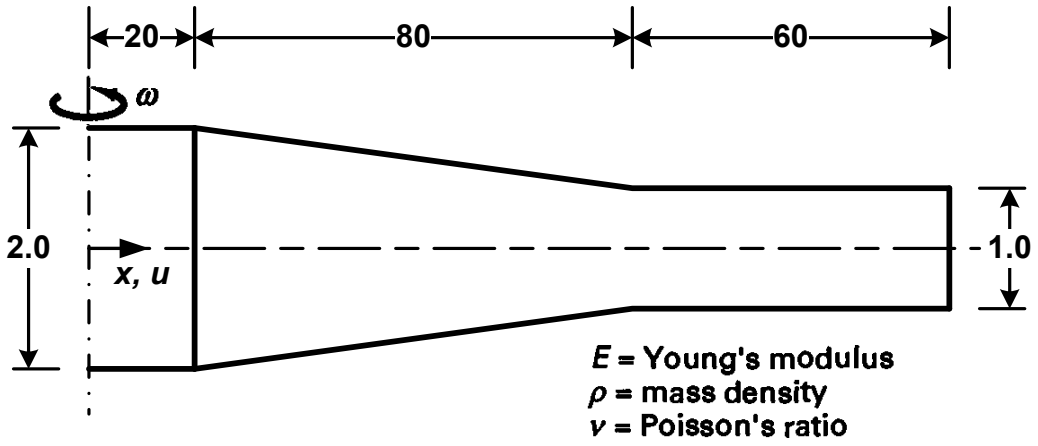
Homework 2

Instructor: Prof. K. J. Bathe

Assigned: 02/14/2008
Due: 02/21/2008

Problem 1 (20 points):

Consider the disk with a centerline hole of radius 20 shown spinning at a rotational velocity of ω radians/second.



Idealize the structure as an assemblage of 2 two-node elements and calculate the steady-state (pseudostatic) equilibrium equations. (Note that the strains are now $\partial u/\partial x$ and u/x, where u/x is the hoop strain.)

Note: Assume linear analysis conditions.

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Spring 2011