

**2.092/2.093**  
**FINITE ELEMENT ANALYSIS OF SOLIDS AND FLUIDS I**  
**FALL 2009**

**Homework 5**

Instructor: Prof. K. J. Bathe  
TA: Seounghyun Ham

Assigned: Session 10  
Due: Session 12

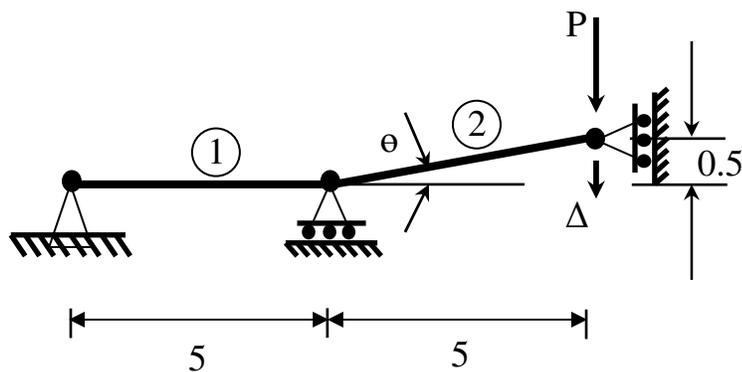
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**Problem 1 (20 points):**

Exercise 4.21, p. 224

**Problem 2 (20 points):**

Consider the snap-action toggle shown in its initial configuration. Establish the force-deflection curve  $P$  versus  $\Delta$ . Assume small strain conditions and that each element has a cross-sectional area  $A$  and Young's modulus  $E$ .



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