

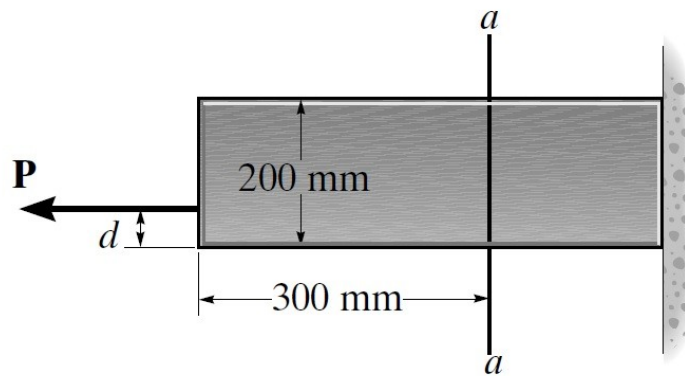
CE 203 STRUCTURAL MECHANICS I

First Semester 2012 / 2013 (121)

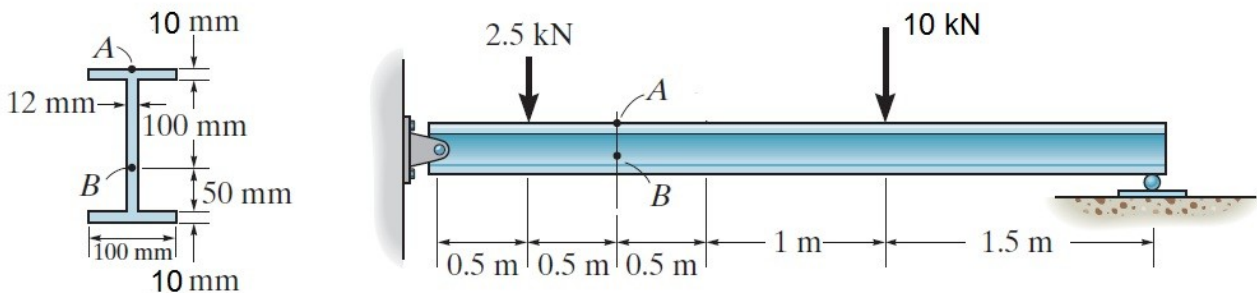
HOMEWORK NO. 13

- **Textbook Sections Covered:** 8.2 (Compound Stress)
- **DUE DATE:** Monday, 17 December 2012

1 – The given thin plate is subjected to the shown load. Determine the largest value of P that can be safely applied. Also, determine the location of the Neutral Axis. *Given: allowable tensile stress is 20 MPa, allowable compressive stress is 24 MPa, plate thickness = 10mm, $d = 40$ mm.*



2 - The given I-beam is subjected to the loading shown. Determine the stress components (normal & shear) at points A and B and show the results on a differential element at each of these points. Use the shear formula (VQ/Ib) to compute the shear stress.



3 - Solve problem 8-45 (p. 427) in your textbook, but make the following change: **the block width should be 60 mm (instead of 75mm), and the magnitude of the 30 kN force should be changed to 10 kN.**

4 – The 60 mm-diameter rod is fixed to the wall and is subjected to the loads shown. Determine the state of stress at point D and at point E. Show the results on a differential element located at each point.

