King Fahd University of Petroleum & Minerals

CIVIL ENGINEERING DEPARTMENT

CE 203 STRUCTURAL MECHANICS I

Second Semester 1433 / 2012 (**112**)

HOMEWORK NO. 13

- **Textbook Sections Covered:** Section 8.2 (stress due to Combined Loading)
- **DUE DATE**: **Monday 6 - May - 2012**

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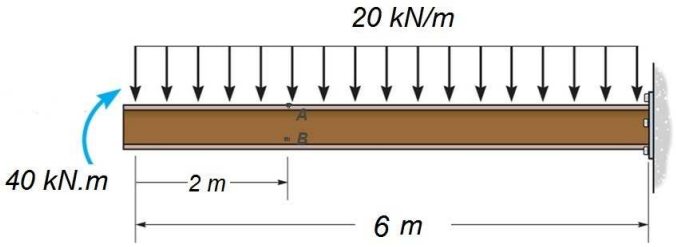
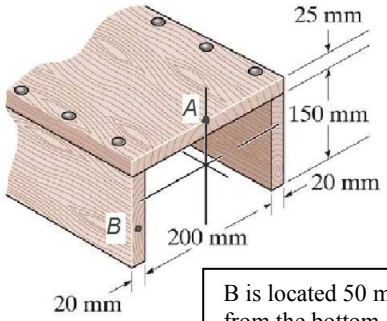
1 - Solve **Example 8.3** (page 415 in the textbook), but change the location of point A to be at 1.5 m from the top (instead of 1 m).

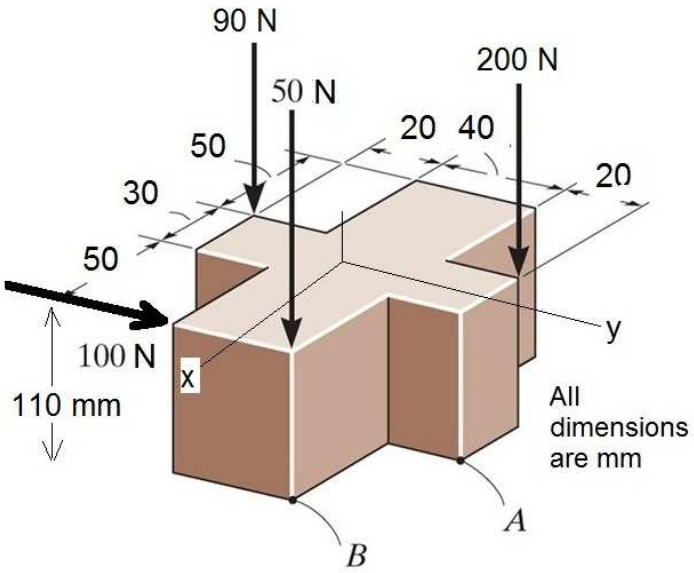
2 – For the given beam , determine the normal stress and shear stress at point A. Also , determine the normal stress and shear stress at point B.





B is located 50 mm from the bottom

3- The given solid block is subjected to the shown forces. Determine the normal stress at point A , and at point B. Show the final answers on small differential elements.



4 - Solve problem 8.63 in the textbook, but change the weight of the sign to 10 kN (instead of 7.5) and change the wind pressure to 6 kN/m^2 (instead of 8).

5 - The given rod has a diameter of 80 mm . Determine the state of stress at **point A** and show the results on a differential element at that point. Repeat the same but for **point C** (which is the center of the cross section).