Institution of Civil Engineers

OCTOBER 6 UNIVERSITY
STUDENT CHAPTER
2014-2015

المادة : منشات معدنية

نوع المحتوى : SHEET 1

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الاسبوع الأول

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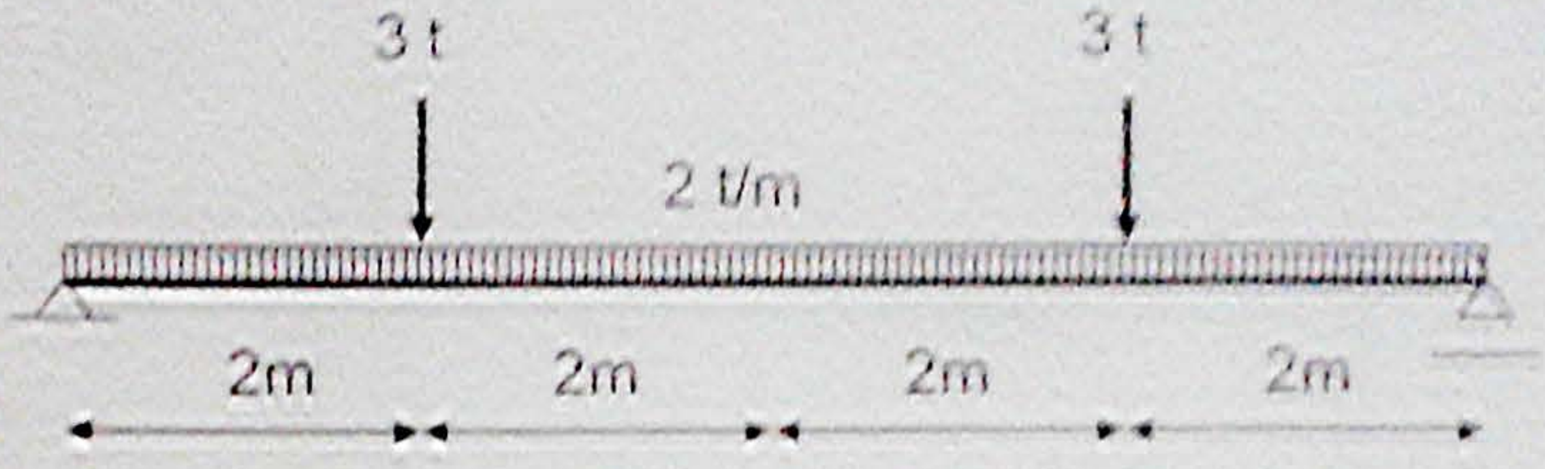
Steel

6 October University
Building and Construction Department
Design of Steel Structures (1)

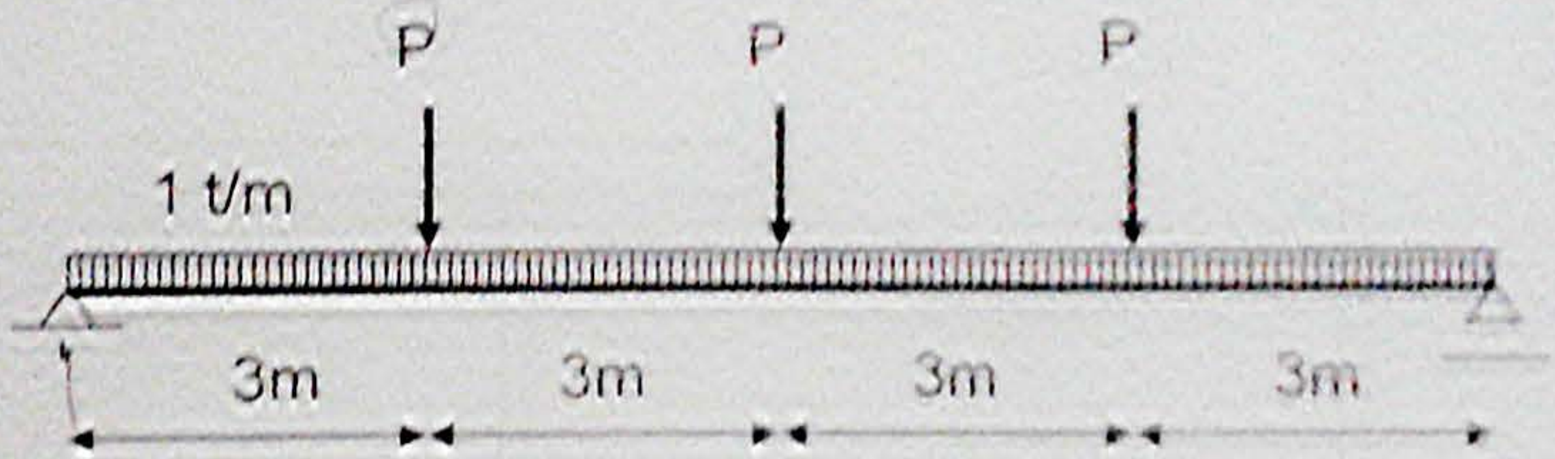
2014-2015
3rd Year
First Term

Sheet No. 1

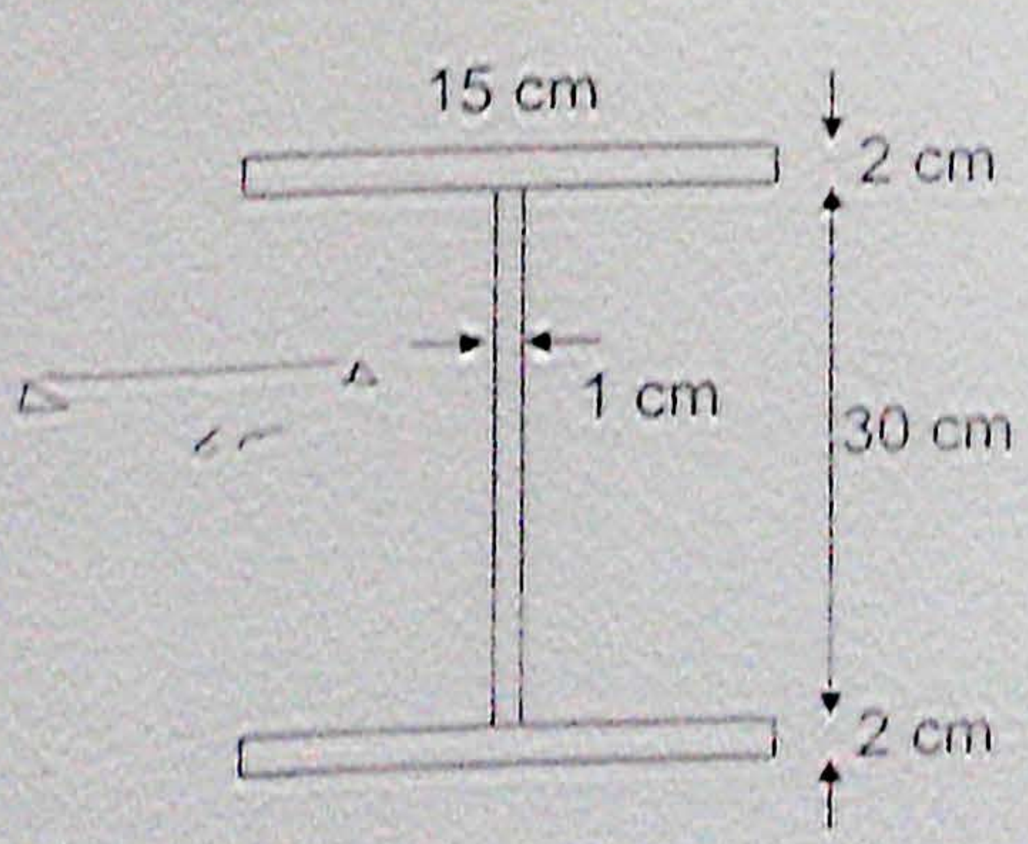
1. Find the straining actions for the following beam with the given loads

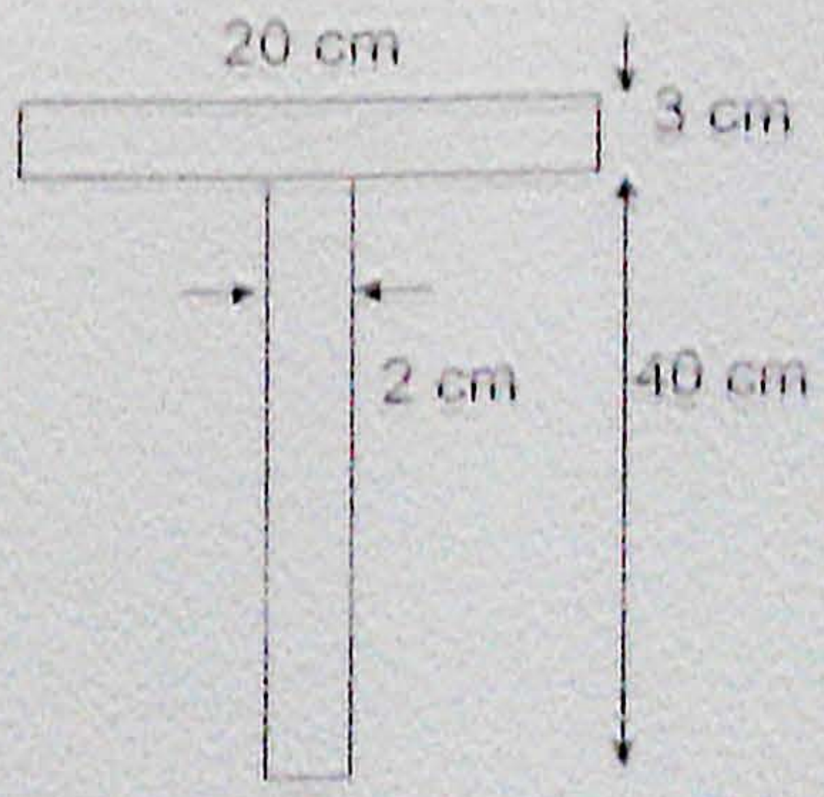


2. For The following beam, find the maximum load P that can be applied on the beam, if the maximum bending moment is 30 mt.

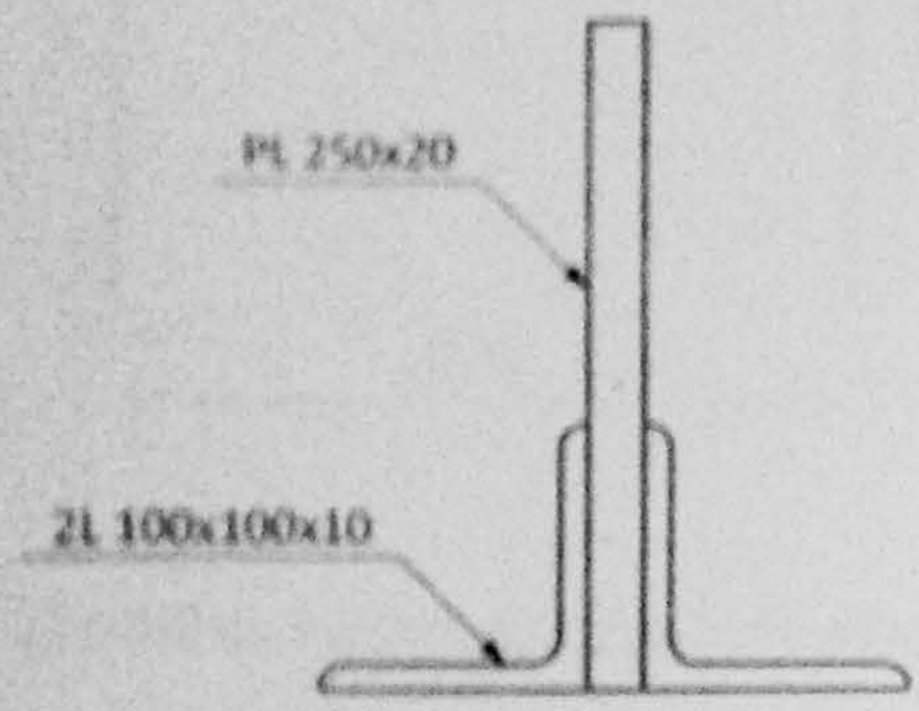


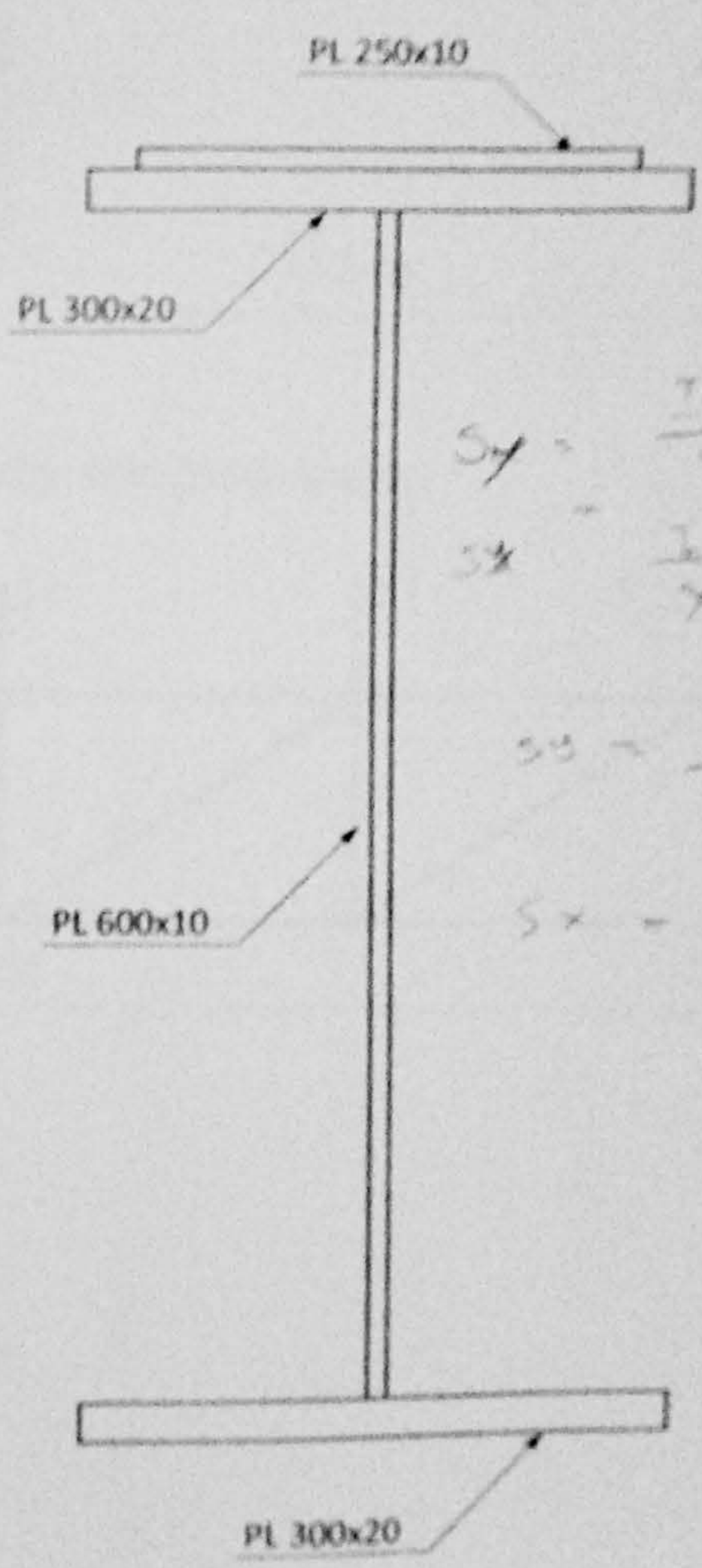
3. A simple beam of span 6m and a uniform load of 3 t/m, draw the maximum normal stress distribution and the maximum shear stress distribution if the beam is composed of the following cross sections:

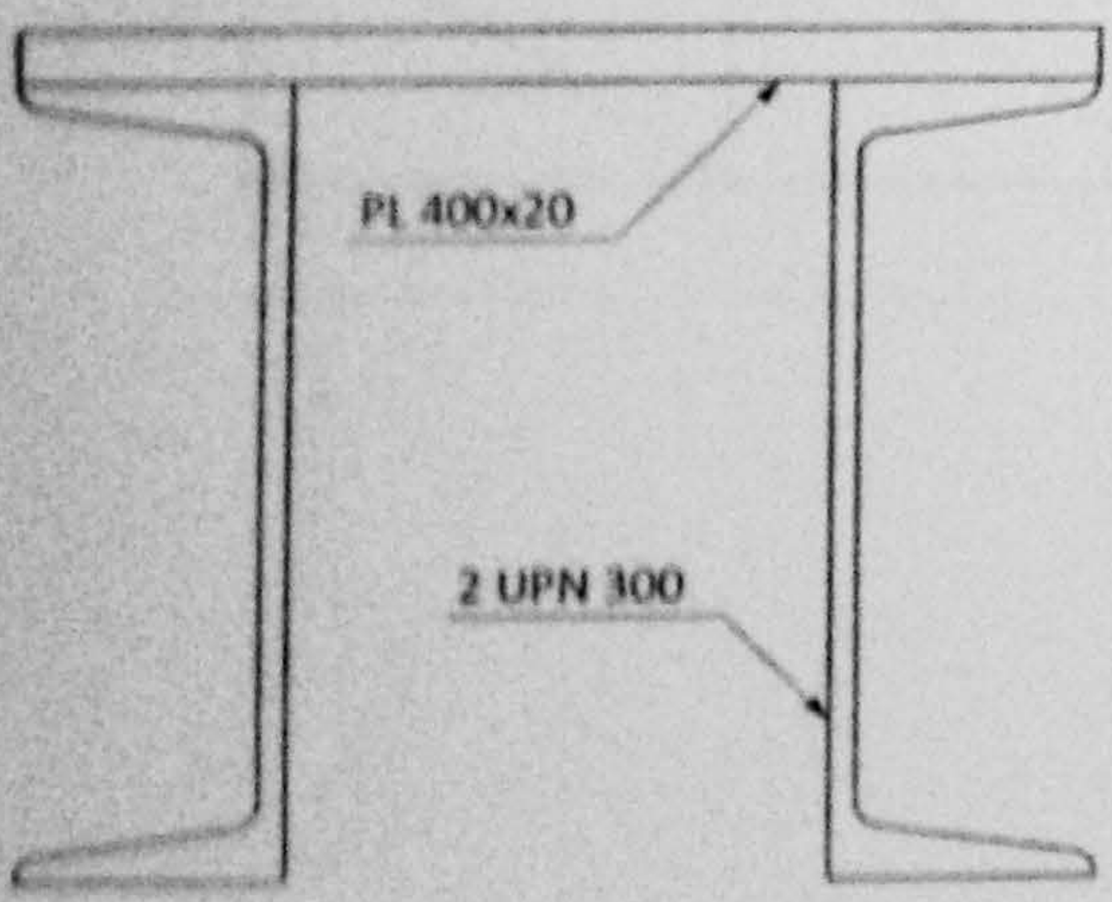




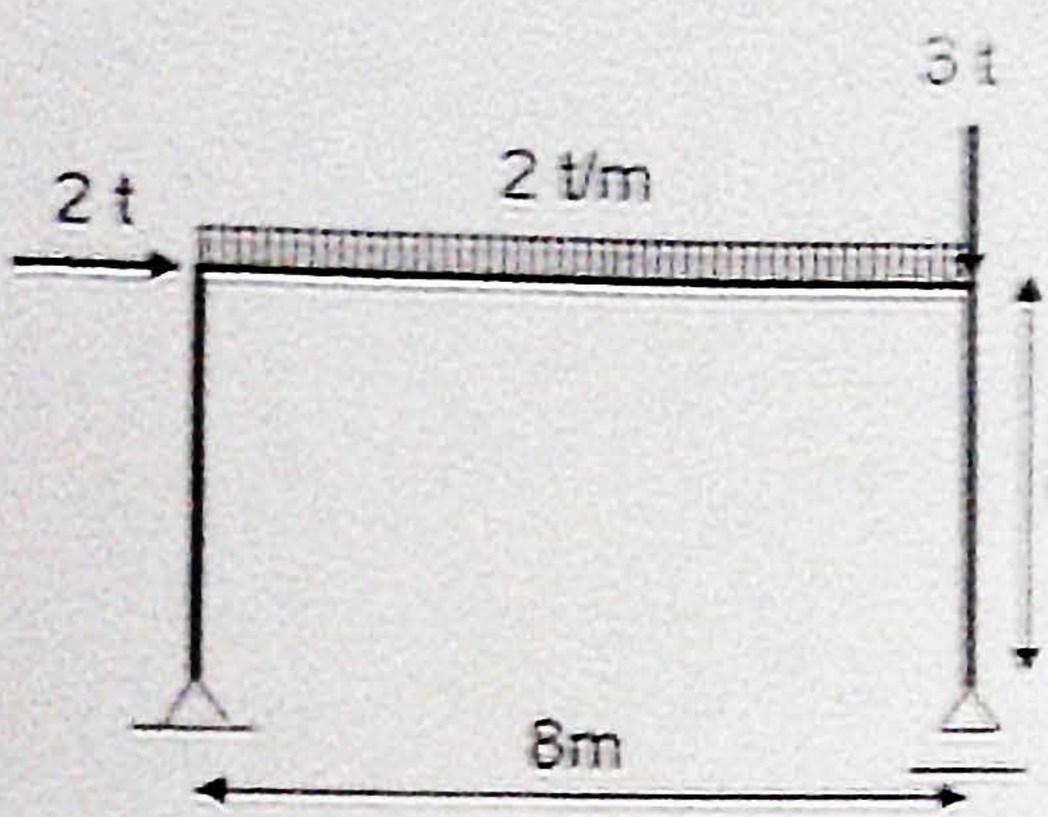
4. Given the shown built-up sections, determine the following:
   a. Cross section area
   b. Location of the neutral axis
   c. Moment of inertia about both strong- and weak-axis
   d. Section modulus about both strong- and weak-axis
   e. Radius of gyration about both strong- and weak-axis

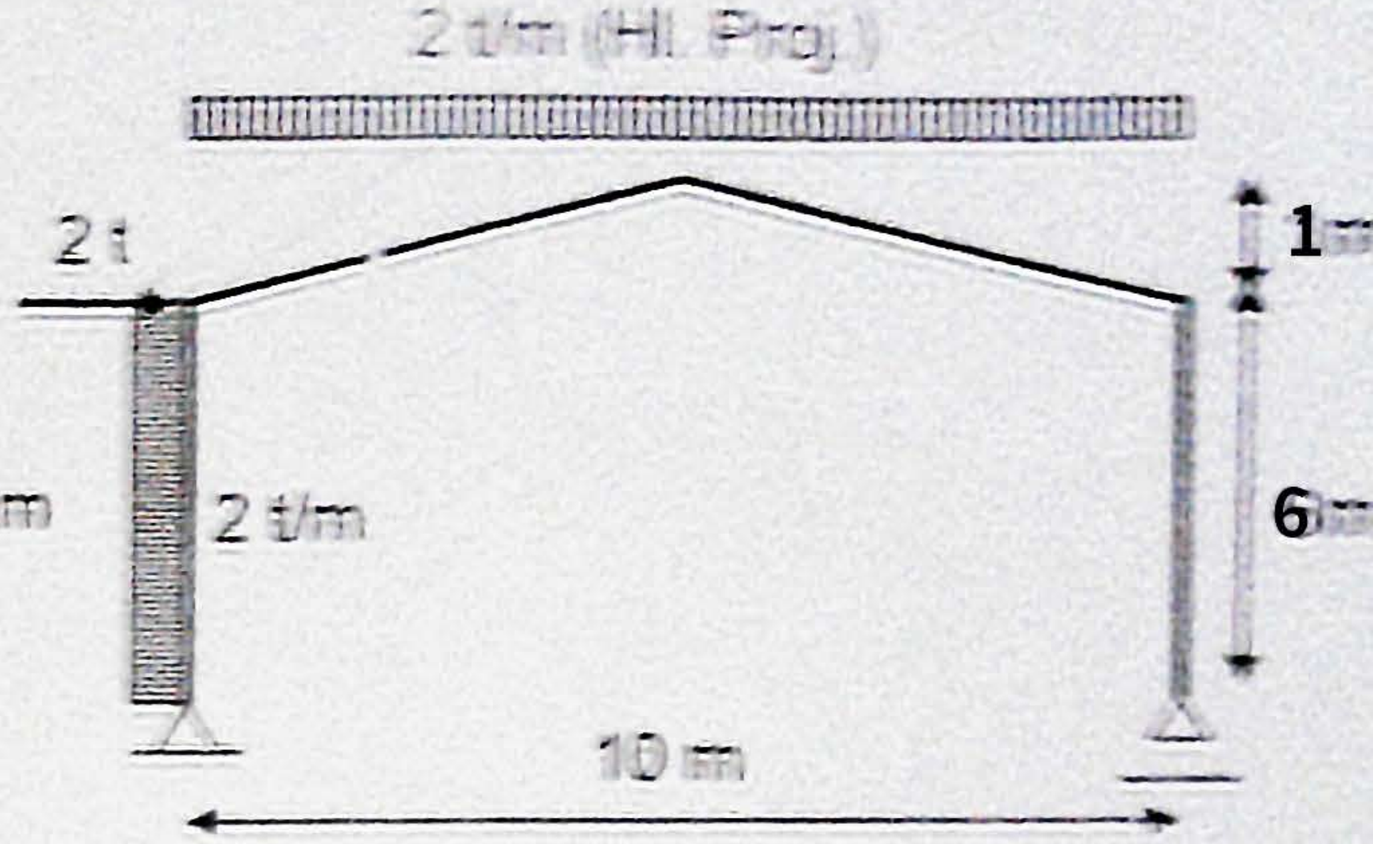






5. Find the straining actions for the following frames with the given loads





6. Find the forces for the following truss with the given loads.