

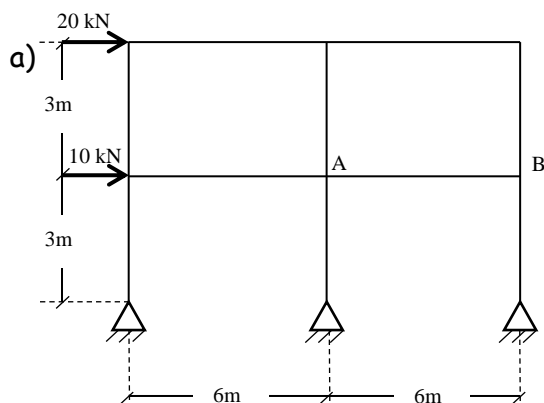
CE 425 Introduction to Finite Elements

Assignment # 4 (due November 17, 2014 till 10:00)

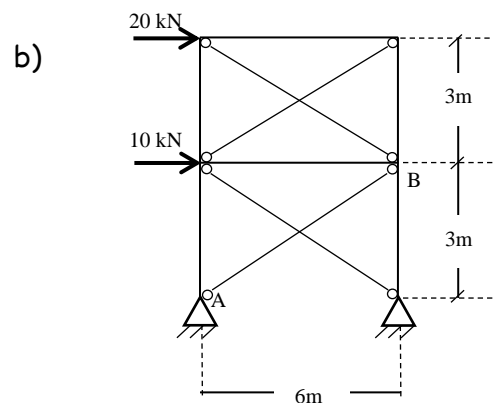
1) Develop a 2D frame analysis program by using Matlab, Mathcad or any other similar software. You can modify a 2D truss analysis program or use the step-by-step analysis guide which you can download from the course's web page. Your program should be capable of

- Take nodal coordinates, connectivity, nodal force, material and support information as inputs
- Perform the analysis without any user interaction
- Compute the member-end forces in local coordinates

2) Use your program to analyze the given structures. Report the structural displacements and member-end forces of member AB.



All members are 50 cm x 50 cm
Type 1 material



All beams and columns are 50 cm x 50 cm
Type 1 material
All braces are 3mm diameter
Type 2 material

Type 1 material: $E=30000$ MPa & Type 2 material: $E=200000$ MPa