CE383 STRUCTURAL ANALYSIS

FALL 2013 – 2014

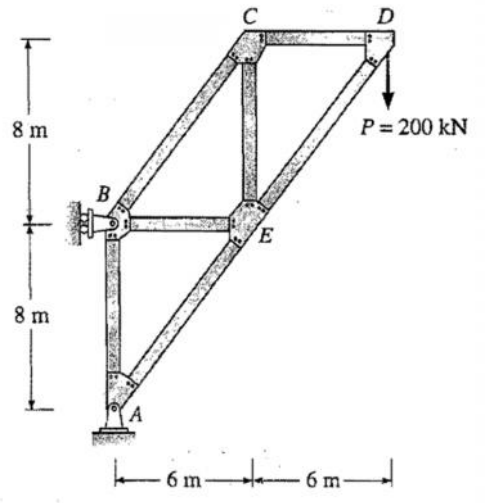
HOMEWORK 2

DUE: 06.11.2013 @ 17.00

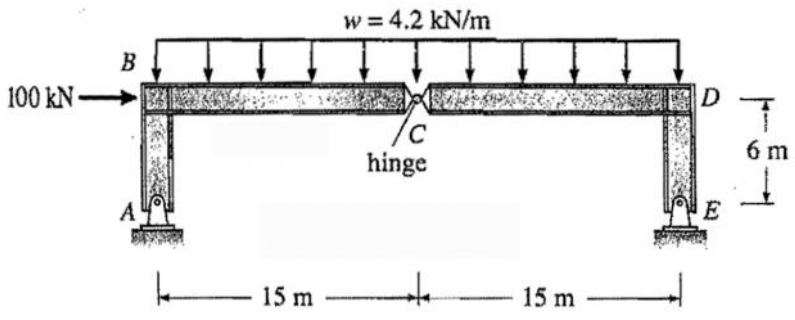
There will 20% deduction per day for late submission

IMPORTANT NOTE: Homework papers will be submitted with all sheets binded together by stapling the upper left corner. Do not use sheet protectors (poşet dosya). Write both your ID number and full name. Homework documents that are not compatible with this format will be penalized.

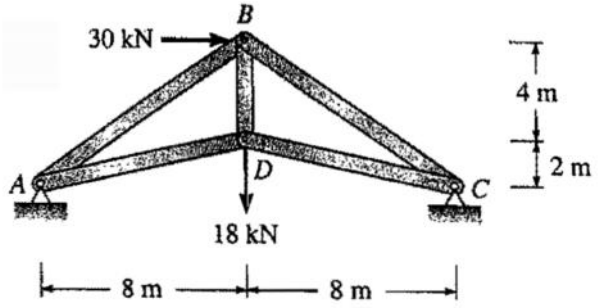
Q1) For the truss given below, compute the vertical and horizontal displacements of joint *E* produced by the 200 kN load. The area of all bars = 3600 mm^2 and E = 100 GPa.



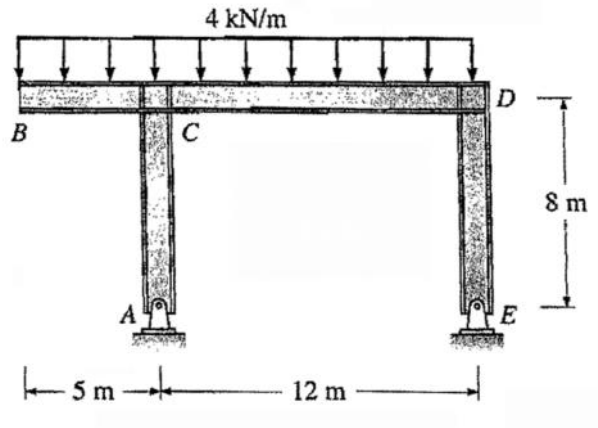
Q2) Compute the vertical displacement of the hinge at *C* and horizontal displacement of point *D* in the figure below. *EI* is constant for all members. E = 200 GPa and I = $300x10^6$ mm^4. Ignore axial deformations.



Q3) For the truss given below, compute the reactions and bar forces produced by the applied loads. Given: *AE* = constant and same for all members. A = 1000 mm^2 and E = 200 GPa.



Q4) Determine the reactions at supports A and E in the figure given below and draw bending moment diagram. *EI* = constant is constant for all members. Ignore axial deformations.



Q5) Compute the reactions and the force on the spring, draw the shear and moment diagrams for the beam given below. Given: *EI* is constant for the beam. E = 200 GPa and I = 40x10^6 mm^4. Ignore axial deformations.