

CE383 STRUCTURAL ANALYSIS

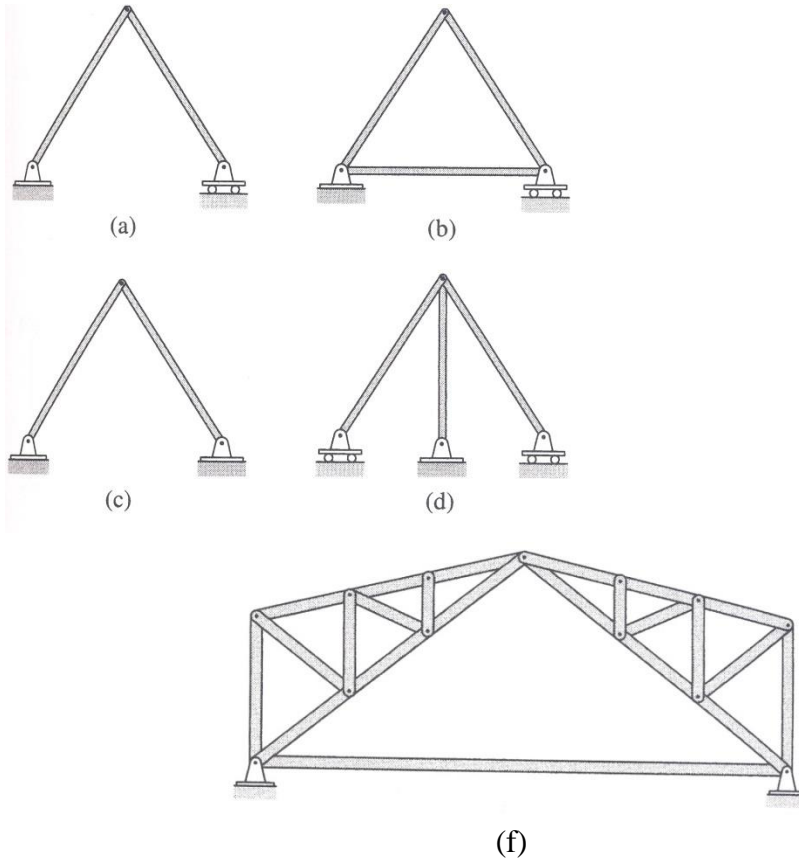
SPRING 2015

HOMEWORK 1

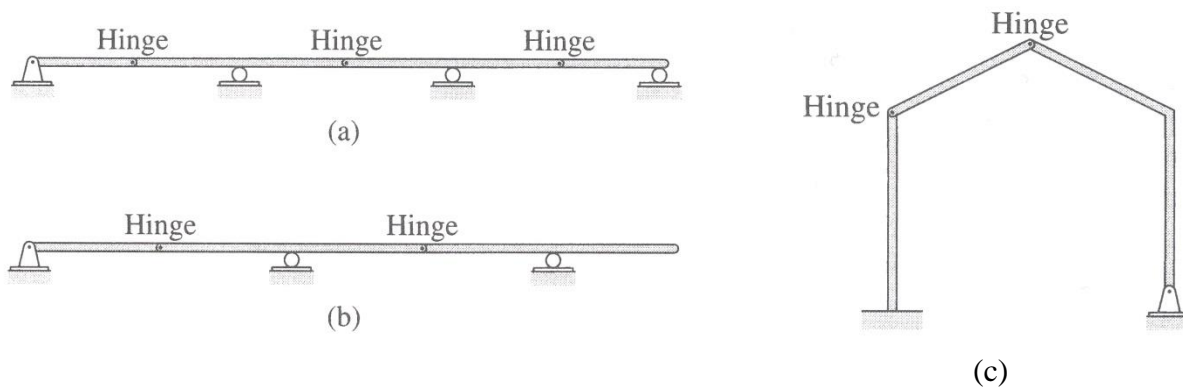
DUE: 23.03.2015 @ 13.00

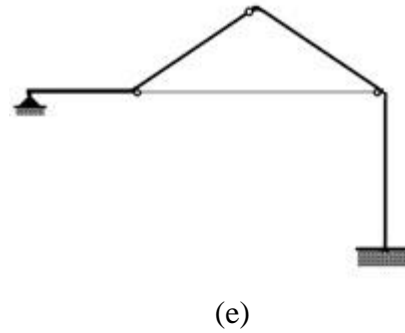
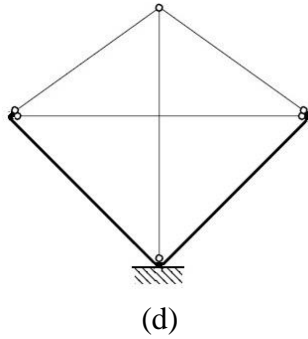
Homework assignments submitted past the deadline will be accepted subject to a 20% deduction per day.

Q1) Classify each of the plane trusses as unstable, statically determinate or statically indeterminate. If the truss is statically indeterminate, determine the total degree of static indeterminacy.

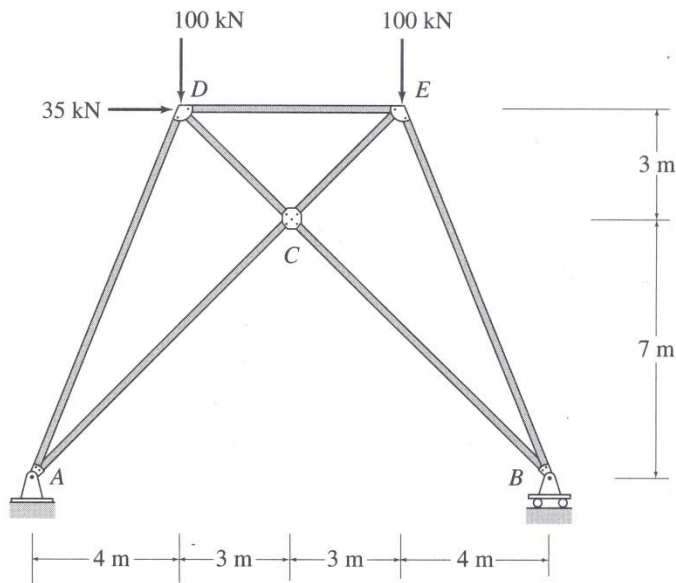


Q2) Classify each structure, as unstable, statically determinate or statically indeterminate. If the structure is statically indeterminate, determine the total degree of static indeterminacy.





Q3) Calculate the horizontal displacement at E for given plane truss. Assume that all members have the same EA .



Q4) Given structure has the same EI for all members. Answer the following questions:

- Plot the axial force, shear force and bending moment diagrams for the entire structure.
- Calculate the displacement and rotation at skew roller support B by assuming that all members are axially rigid.
- Calculate the displacement and rotation at B by assuming that all members have $EA = EI/4$ in magnitude, as well.

