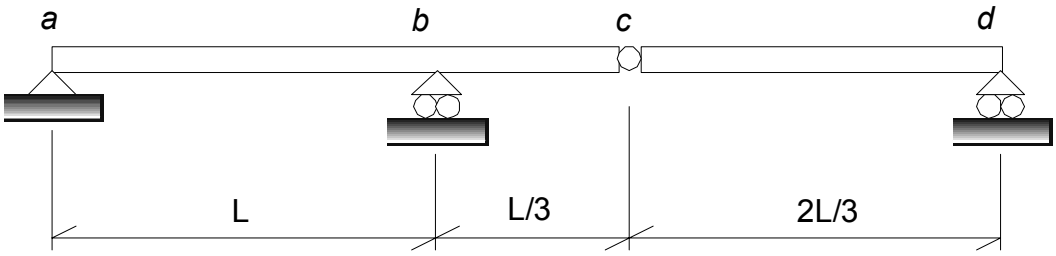
EXAM #1 - CE 342 - Fall 1999

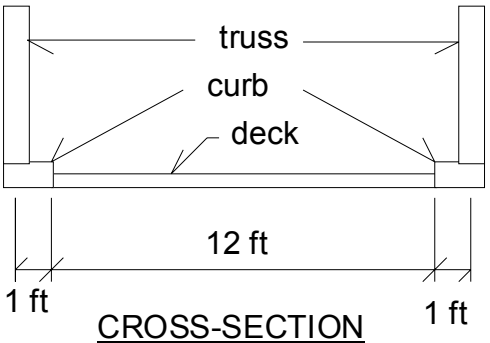
Please use additional paper when necessary. Do not try to cram everything on the pages provided and do not write on the back of the pages.

1.**Problem #** (35 points)
2.Given the beam shown in the figure below, draw the influence line for the shear just to the left and just to the right of the hinge at *c*.

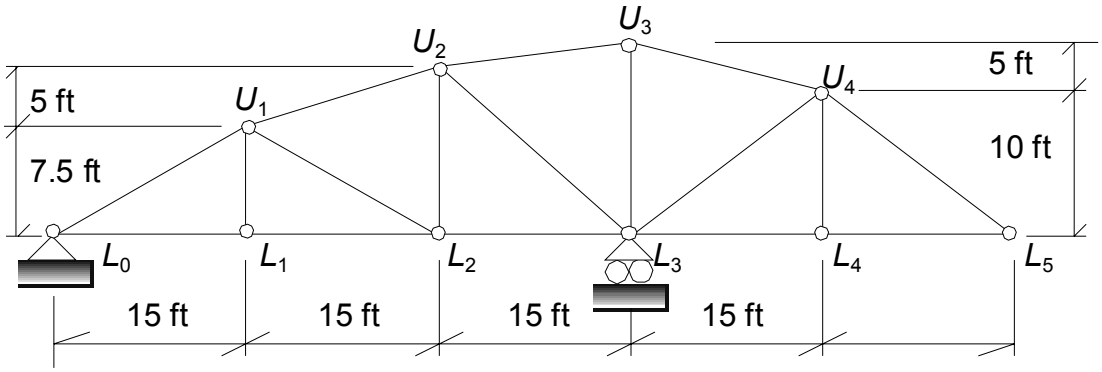


1.**Problem #** (35 points)

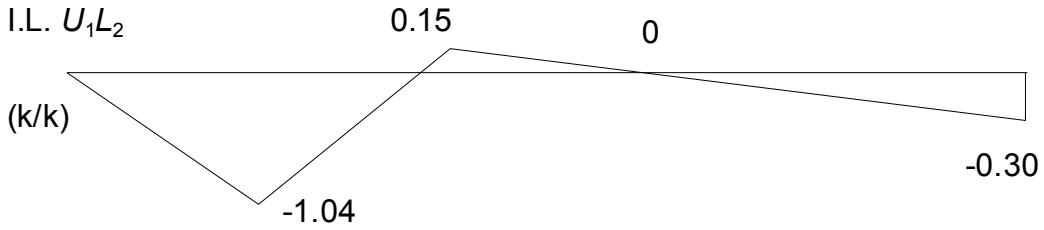
2.A single-lane bridge is supported by two trusses. The bridge deck travels across the bottom chord of the truss. The influence line for member U_1L_2 is shown below. Determine the maximum tensile and compressive force in member U_1L_2 due to an HL-93 load.



CROSS-SECTION



ELEVATION



Problem # (30 points)

Determine the vertical displacement at joint L_2 of the truss shown below due to the:

1) Gravity load shown
2) A 100°F increase in the upper chord members.

Assume E = 29,000 ksi and $\alpha = 6.5 \cdot 10^{-6}/°F$ and A = 4.0 in^2.