ENDS 231. Assignment #4

**Date:** 9/25/07, due 10/2/07

**Problems:** from Onouye, Chapter 4.

*Note: Problems marked with a * have been altered with respect to the problem stated in the text.*

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**4.1.15** A bowstring or crescent truss is loaded as shown. Determine the member forces in $DE$, $EG$, and $GH$. (method of sections)

*Also identify any special case member forces and SOLVE for member forces $EH$ and $EB$ using the method of joints.*

Partial answers to check with: $B_x = +5.5$ k, $A_y = +6.5$ k, $HG = 5.5$ k, $ED = -7.12$ k, $EG = 1.77$ k, $EH = 2$ k, $EB = -7.78$ k.

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**4.1.13** Solve for member forces $DE$, $DH$, and $GH$. (method of sections)

Partial answers to check with: $DH = -13.4$ k, $DE = -6$ k, $GH = 6$ k

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**4.2.7** A three-hinged gabled frame supports two unequal roof loads as shown. Determine the support reactions and the internal pin forces at $B$. (pinned frames)

Partial answers to check with: $A_x = +1.54$ kN, $A_y = +4.5$ kN, $C_x = -1.54$ kN, $C_y = +6.3$ kN, $B_x = -1.54$ kN (wrt $AB$), $B_y = -0.9$ kN (wrt $AB$).