ENDS 231. Assignment #4

Date: 2/12/08, due 2/19/08  Pass-fail work

Problems: from Onouye, Chapter 4.
Note: Problems marked with an * have been altered with respect to the problem stated in the text.

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

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.

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

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

4.2.7 A three-hinged gabled frame supports two unequal 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).