ENDS 231. Assignment #2

Date: 1/25/07, due 2/1/07

Pass-fail work

Problems: from Onouye, Chapter 2 & 3.

2.4.2 A 1000-lb. crate is subjected to two applied forces at C. Determine the moment about points A and B due to forces $F_1$, $F_2$, and the weight $W$.

Partial answers to check with: $M_A = -1.0 \text{ k-ft}$

$M_B = +4.4 \text{ k-ft}$.

Problem 2.4.2

2.4.4 A painter is standing at midheight on a ladder inclined at an angle of 65° from the horizontal. Determine the horizontal force $B_x$ (reaction from the wall surface) necessary such that the resultant moment at A is equal to zero.

Partial answers to check with: $B_x = 46.7 \text{ lb}$.

2.4.8 A vertical truss supports two applied forces $F_1$ and $F_2$. Determine the moment at supports A and B.

Partial answers to check with: $M_A = -21,420 \text{ lb-ft}$

$M_B = -4,628 \text{ lb-ft}$.

Problem 2.4.8

3.1.8 A 200-lb. weight is supported by cables DC, AC, and DE and by the vertical pole BC. Determine all cable forces and the force in the pole BC.

Partial answers to check with: $DE = 203 \text{ lb}$,

$DC = 246 \text{ lb}$, $AC = 393 \text{ lb}$,

$BC = 488 \text{ lb}$ (C)