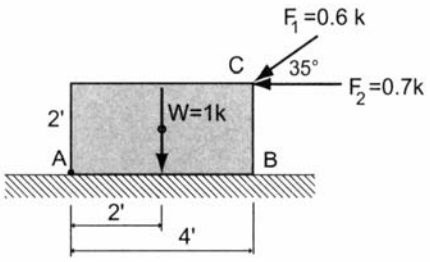
ENDS 231. Assignment #2

Date: 1/25/07, *due 2/1/07* *Pass-fail work*

Problems: from Onouye, Chapter 2 & 3.

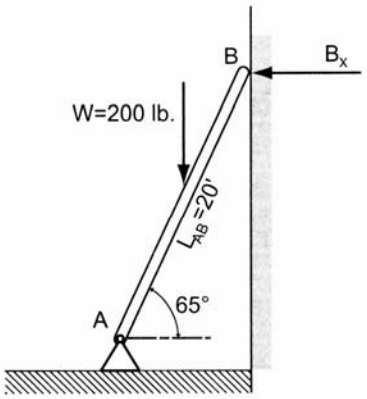
2.4.2 A 1000-lb. crate is subjected to two applied forces at *C*. Determine the moment about points *A* and *B* due to forces F_1, F_2, and the weight *W*.



Problem 2.4.2

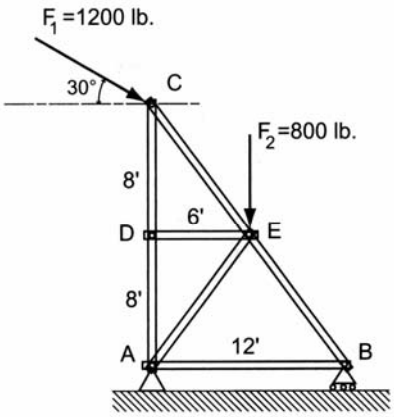
Partial answers to check with: $M_A = -1.0$ *k-ft*
$M_B = +4.4$ *k-ft*.

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: $B_x = 46.7$ *lb.*

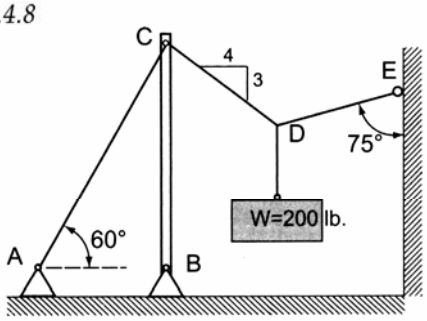
2.4.8 A vertical truss supports two applied forces F_1 and F_2. Determine the moment at supports *A* and *B*.



Problem 2.4.8

Partial answers to check with: $M_A = -21{,}420$ *lb-ft*
$M_B = -4{,}628$ *lb-ft*

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*.



Problem 3.1.8

Partial answers to check with: $DE = 203$ *lb*,
$DC = 246$ *lb*, $AC = 393$ *lb*,
$BC = 488$ *lb (C)*