ENDS 231. Assignment #2
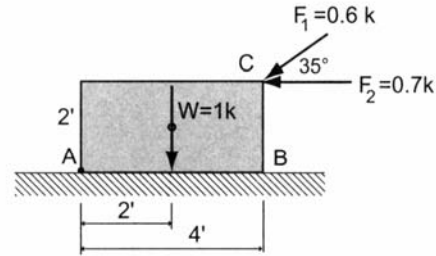
Date: 9/6/07, *due 9/13/07*   *Pass-fail work*

Problems: from Onouye, Chapter 2 & 3.

(25%) **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*. (*moment of a force*)
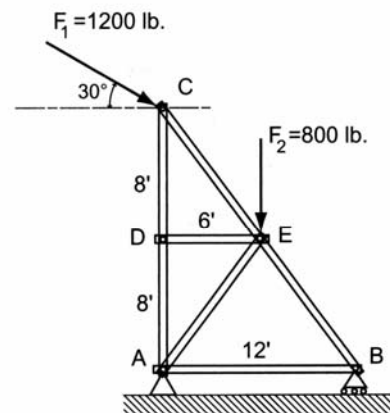
   Partial answers to check with: $M_A = -1.0$ $^{k\text{-}ft}$
                                    $M_B = +4.4$ $^{k\text{-}ft}$.   *Problem 2.4.2*

(10%) **2.4.4**   A painter is standing at midheight on a ladder in-clined at an angle of 65° from the horizontal. Determine the horizontal force B_x (reaction from the wall surface) neces-sary such that the resultant moment at *A* is equal to zero. (*moment of a force*)
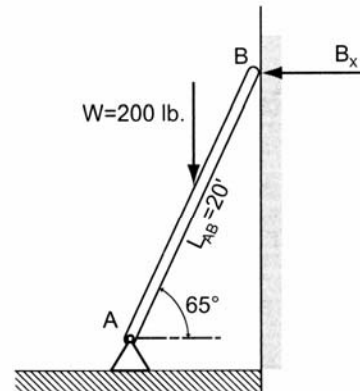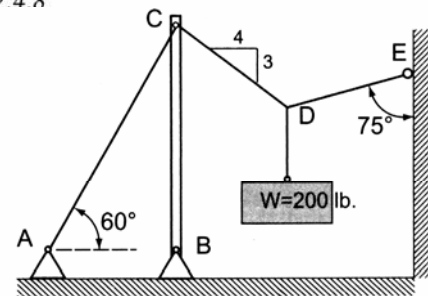
   Partial answers to check with: $B_x = 46.7$ lb.

(25%) **2.4.8**   A vertical truss supports two applied forces F_1 and F_2. Determine the moment at supports *A* and *B*. (*moment of a force*)

   Partial answers to check with: $M_A = -21,428$ $^{lb\text{-}ft}$
                                    $M_B = -4,628$ $^{lb\text{-}ft}$

   Problem 2.4.8

(40%) **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*. (*equilibrium of a particle*)

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

   Problem 3.1.8