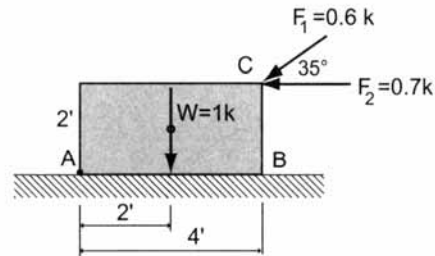# ENDS 231. Assignment #2

Date: 1/24/08, *due 1/31/08*   *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*)
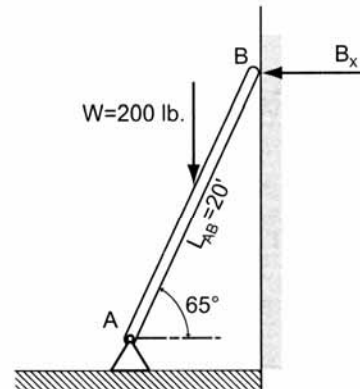
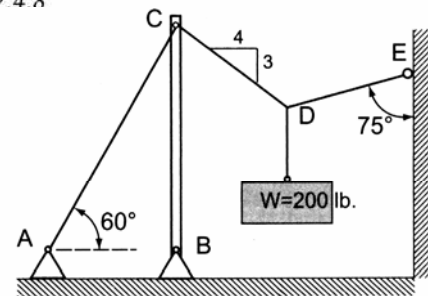> *Partial answers to check with:* $B_x = 46.7$ lb.

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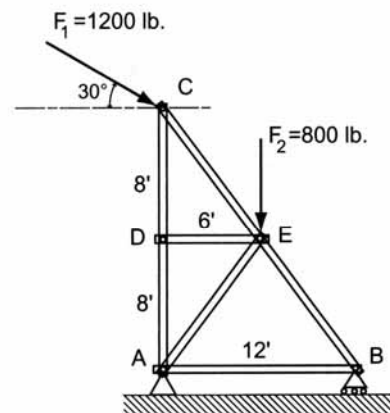
> *Partial answers to check with:* $M_A = -21,428^{\ lb\text{-}ft}$
> $M_B = -4,628^{\ lb\text{-}ft}$

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