ENDS 231. Assignment #1

Date: 5/30/06, *due 6/1/06*   *Worth 25 pts.*

Problems: all but 1A & 1B from Onouye, Chapter 2.

1A)   Determine the weight in newtons (N) of a car whose mass is 1550 kg. Convert the
   mass of the car to kN and then determine its weight in pounds and kips. (No figure.)

   Partial answer to check with: 15,205.5 N

1B)   You are given two measurements off a non-dimensional ruler of A = 8.69 and B =
           1.427 marked in 100ths (0.01). Knowing the accuracy of the data you are given,
           determine the quantities of A+B, A-B, A×B and A/B with reasonable precision.

   Partial answers to check with: A+B = 10.12, A×B = 12.4006

2.3.5   Determine using the sequence F_1 to F_2 to F_3. Scale:
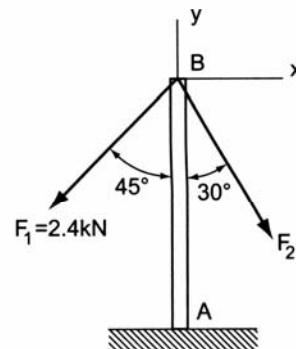10 mm = 1 kN

   Partial answers to check with: R = 3.5 k,
                                    θ = 40° below +x
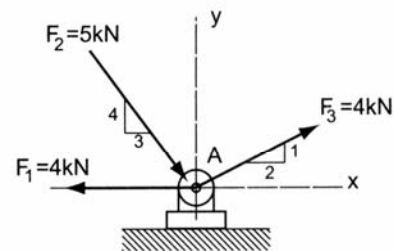
Problem 2.3.5

2.3.7   The resultant of the two forces F_1 and F_2 is vertical,
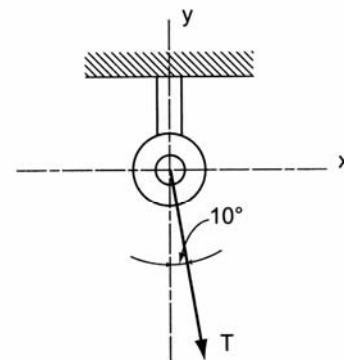down the axis of the pole *AB*. Determine the magnitude of
F_2. Scale: 1 mm = 40 N

   Partial answers to check with: R ≈ 4.5 kN down

Problem 2.3.7

2.3.12   If a hook can sustain a maximum withdrawal force
of 1 kN in the vertical direction, determine the maximum
tension *T* that can be exerted.

   Partial answers to check with: T = 1.02 kN

Problem 2.3.12