

## Homework Assignment #9

(due: Friday, November 9, 4:30 pm)

**1. Center of Mass:** Taylor problem (10.8) (6P)

Hint: Use as temporary origin the center of the circle (the wire is an arc of this circle).

**2. Lamina:** Taylor problem (10.23) (4P)

**3. Toblerone:**

**3a.** Taylor problem (10.12)

Hint: For the moment of inertia you should obtain  $\frac{Ma^2}{3}$  (7P)

**3b.** Taylor problem (10.28) (6P)

**4. Kinetic Energy of Rotating Rigid Body:** Taylor problem (10.33) and proof also the BAC-CAB rule. (7P)

**5. Principal Moments and Axes:** Taylor problem (10.36) (7P)

**6. Euler Equations for Lamina:** Taylor problem (10.41) (6P)

**7. Space Station:** Taylor problem (10.44) (7P)