




Physic² 121: Phundament[°]Is of Phy²ics I

November 22, 2006



D. Roberts


University of Maryland

PHYS 121



Chapter 8

Rotational Equilibrium and Rotational Dynamics



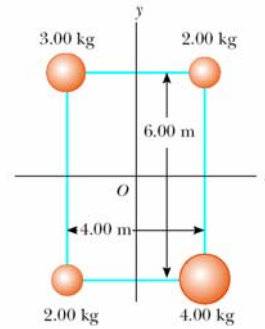
D. Roberts

University of Maryland

PHYS 121

Example Problem (8.29)

- Four objects are held in position at the corners of a rectangle by light rods as shown in the figure. Find the moment of inertia of the system about
 - (a) the x -axis,
 - (b) the y -axis, and
 - (c) an axis through O and perpendicular to the page.
- What are the coordinates of the center-of-gravity?



Example Problem (8.33)

- A cylindrical fishing reel has a moment of inertia $I = 6.8 \times 10^{-4} \text{ kg}\cdot\text{m}^2$ and a radius of 4.0 cm. A friction clutch in the reel exerts a restraining torque of 1.3 N·m if a fish pulls on the line. The fisherman gets a bite, and the reel begins to spin with an angular acceleration of 66 rad/s^2 .
 - (a) What is the force exerted by the fish on the line?
 - (b) How much line unwinds in 0.50 s?