

PHYS 1443 – Section 003

Lecture #13

Monday, Oct. 28, 2002

Dr. Jaehoon Yu

1. Rotational Kinetic Energy
2. Calculation of Moment of Inertia
3. Relationship Between Angular and Linear Quantities
4. Review

There is no homework today!! Prepare well for the exam!!



Announcements

- 2nd Term exam
 - This Wednesday, Oct. 30, in the class
 - Covers **chapters 6 – 10**
 - No need to bring blue book
 - Some fundamental formulae will be given
 - Bring your calculators but delete all the formulae



Rotational Kinematics

The first type of motion we have learned in linear kinematics was under a constant acceleration. We will learn about the rotational motion under constant acceleration, because these are the simplest motions in both cases.

Just like the case in linear motion, one can obtain

Angular Speed under constant angular acceleration:

$$\omega_f = \omega_i + \alpha t$$

Angular displacement under constant angular acceleration:

$$\theta_f = \theta_i + \omega_i t + \frac{1}{2} \alpha t^2$$

One can also obtain

$$\omega_f^2 = \omega_i^2 + 2\alpha(\theta_f - \theta_i)$$

