Physics 121 – September 2, 2009

Office Hours: **Thur 10:30-12:00**
Wkmn 309 **Fri 1:00-2:30**

Assignments:

This week:

- Finish Chapters 2 and 3 of textbook.
- Mastering Physics Assignment 2 due by Sunday, Sept 6 @ 11pm.
- Homework/recitation problems due 9/4: Chapter 2 - #45,46,53,55,56,59,63,71
- First week of labs; FCI diagnostic in recitation.

Next week:

- Read Chapter 4 of textbook.

Today: Equations of motion with constant acceleration (a=constant)

Cases and Uses

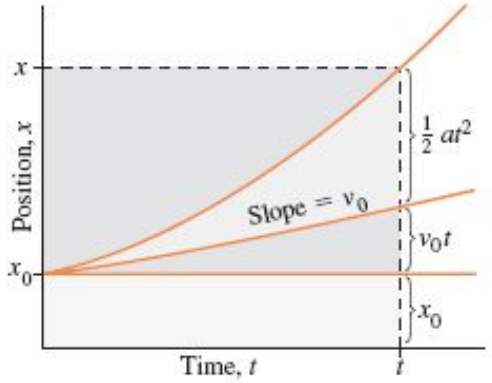
Constant acceleration is a special case that yields simple equations describing one-dimensional motion:

$$v = v_0 + at$$

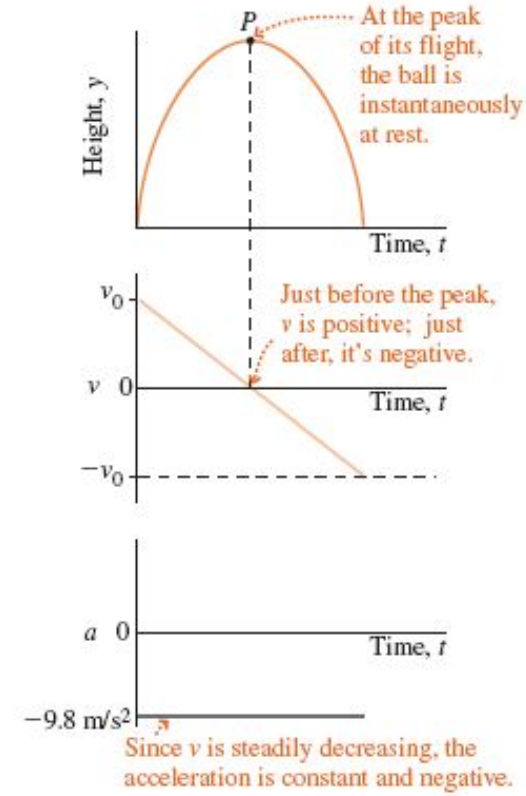
$$x = x_0 + v_0 t + \tfrac{1}{2}at^2$$

$$v^2 = v_0^2 + 2a(x - x_0)$$

These equations apply only in the case of constant acceleration.



An important example is the acceleration of gravity, essentially constant near Earth's surface, with a magnitude of approximately 9.8 m/s².



iclicker:

Two students are standing on the edge of the roof of Workman Center. Student #1 throws a ball straight down with velocity $-v_o$ and it lands on the sidewalk below. Student #2 throws a ball straight up with velocity $+v_o$ (i.e., the same initial speed) and it also lands on the sidewalk a little time later. How do the final velocities of the balls compare, at the instant of impact with the sidewalk?

A. $v_1 > v_2$

B. $v_1 < v_2$

C. $v_1 = v_2$

D. Not enough info given to compare velocities.