Principles of Physics: Problem Set #4

Numbers, Graphs, Kinematics: Exam Review

$v_{\text{avg}} = \dfrac{\Delta x}{\Delta t}$; $a_{\text{avg}} = \dfrac{\Delta v}{\Delta t}$; speed = slope of x(t) graph ; distance = area under v(t) graph

constant acceleration motion: $v = v_o + at$, $x = x_o + v_o t + \dfrac{1}{2}at^2$

acceleration of gravity: $a_y = -g$

Due: Wednesday Sept. 19 in class

Note: **Exam 1 is next Friday (9/21).** This exam will cover material through chapter 3. The exam will consist of a number of short "quiz-like" problems and a few real calculation problems. The exam is closed book, closed notes but you may bring in **one-half of an 8.5x11" sheet of paper** with **handwritten** notes and equations (but not worked-out problem examples). Your crib sheet will be collected with the exam. Also, you will want a calculator, but no phones, i-pads, etc. are allowed. This problem set should provide some review and practice.

We will have our problem session on Tuesday evening (6:30-9:30 PM in G123) and I will hold an exam review session on Thursday evening 7:00-8:00 (in G123).

Reading assignment:

for Mon, Ch 4 (pp 57-62) [Forces and Newton's Law]

for Wed, Ch 4 (pp 62-66) [Force vectors and Exam Review]

Problem assignment:

(WARNING - The problem naming/numbering scheme in the text is confusing, so ALWAYS double check whether a problem is guided review (**GR**), skill building (**SB**), **Synthesis**, etc.)

CHAPTER 2

GR-6 (pg 29 ... sig. fig. practice)

GR-8 (pg 29 ... proportional reasoning)

GR-10 (pg 29 ... using a graph)

CHAPTER 3

SB-2 (pg 51 ... drawing x(t) and v(t) graphs)

SB-16 (pg 52 ... running around a circular track)

MC-1,2,3 (pg 54 ... multiple choice for a ball thrown upward)

Synth-2 (pg 55 ... catching a speeder)