

Principles of Physics: Problem Set #3
Kinematics: position, velocity, acceleration

$$v = \frac{\Delta x}{\Delta t} \text{ or } \frac{dx}{dt}; \text{ constant velocity: } x = x_o + vt$$

$$a = \frac{\Delta v}{\Delta t} \text{ or } \frac{dv}{dt}; \text{ constant acceleration: } v = v_o + at, \quad x = x_o + v_o t + \frac{1}{2} at^2$$

Due: Friday Sept. 14 in class

Reading assignment:

- for Mon, Ch 3 (pp 40-46) [constant acceleration motion]
- for Wed, Ch 3 (pp 46-49) [using and interpreting graphs]
- for Fri, Ch 3 (pp 40-49) [more kinematics]

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 3

GR-7 (pg 50 ... v(t) graph describing a cars motion)

GR-8 (pg 50 ... Tehmina takes a car ride)

GR-10 (pg 51 ... Tony takes a motorcycle ride)

GR-11 (pg 51 ... throwing a rock out the window)

SB-11 (pg 52 ... x(t) graph for a bicycle ride)

SB-26 (pg 54 ... deer on the highway)

Synth-3 (pg 55 ... measuring speed as a function of time)

Bonus: SB-25 (pg. 54 ... the accelerating squirrel)