

## Physics

### Review Guide - Kinematics in One Dimension

#### Chapter 4 (text) Linear Motion & Chapter 2 (Problem Solving Workbook) Motion

***Definitions:*** Define the following vocabulary words. If needed, use examples (equation) in your definitions. Compare and Contrast (i.e. explain similarities and differences for various related word pairs.)

1. Relative Motion
2. Distance
3. Displacement
4. Speed
5. Instantaneous Speed
6. Average Speed
7. Velocity
8. Instantaneous Velocity
9. Acceleration
10. Instantaneous Acceleration
11. Free Fall
12. Elapsed Time
13. Acceleration due to gravity

**Know Significant Figures and Units: Your answers to all problems should be in the appropriate Significant Figures and include the correct units.**

Conversions – Be able to convert from any unit(s) to any other(s) using a conversion factor.

#### **Problem Solving**

$$\begin{array}{llll} V = \Delta d / \Delta t & a = (V_f - V_i) / t & v = (v + v_0) / 2 & g = -9.8 \text{ m/s}^2 \\ v = v_0 + at & \Delta d = v_0 t + 1/2 at^2 & v^2 = v_0^2 + 2a\Delta d & x = y & a = g \end{array}$$

#### Time, Distance, & Velocity

(Example: Exercise 1, 2, 3, 4, & 8 pg 14 & 15.)

#### Acceleration

(Example: Exercise 5, 6, & 7 pg 14 & 15.)

#### Free fall

Example: Exercise 9 – 14 pg 18 & 19

Exercise A11, A-12, & A-15

Free fall with initial velocity (Rising Objects in text on page 55.)

(Example: Questions: 47, 48, & 54 pg. 66 (text) and my example at the end of your notes (Solutions 11/11/14 in PCR).

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