

“STUDY GUIDE FIRST QTR QUIZ”

aka FUNDAMENTAL /CRITICAL RELATIONSHIPS / CONCEPTS OF INTRODUCTORY PHYSICS (to date)

This document is a recommended First Qtr Quiz Study Guide. This recommendation notwithstanding, there may be problems on the quiz/test, which cover salient points of PSII, not directly highlighted herein.

1. Scalar Quantities – Those requiring only magnitude for sufficient description.
2. Vector Quantities – Those requiring magnitude and direction for sufficient description.
3. Basic SI (*System International*) Units are Meters, Kilograms, Seconds and fluency with the Factor Label Method of units conversion and solution arrangement. See reference links page for further information.
4. Average Speed (or *Velocity if direction is constant and distance equals displacement*) = $V_{AVG} = [\text{Total Distance}] / [\text{Total Time}] = [\Delta d / \Delta t]$ {*Not generally the average of the speeds or velocities.*}
5. Velocity = Speed with a specific direction = Rate of change of displacement = $V = [\Delta d / \Delta t]$
6. Acceleration = $a = \text{Rate of change of Velocity} = \Delta V / \Delta t = (V_f - V_i) / \Delta t$ (*From this one can rearrange to get $V_f = V_i + a(\Delta t)$ or when $V_i = 0$ then $V_f = a(\Delta t)$ assuming a is constant.*)
7. When acceleration is constant, average Velocity = $V_{AVG} = [V_f + V_i] / 2$
8. Position/Displacement, Velocity & Acceleration Graphs as follows:

