Tuesday, October 8/13
Physics 112/111

Midterm - Tentatively: Wed., Nov. 20

1. Quiz: Unit 1 - Section 2 - Mathematical Analysis

   Date: -------~~W~~ednesday, Oct. 9 Rewrite => Thursday.

   - Topics

2. Unit 2 - Dynamics: Section 1 - Introduction to Forces
3. Force
4. Fundamental Forces of Nature
5. Five Specific Forces You Need to Know -> To Be Continued

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6. Practice Problems (PP) - Page 137: 1-4

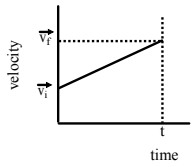
Quiz Topics for Unit 1 - Section 2 - Mathematical Analysis

- uniform motion: constant velocity (constant speed in one direction)

$$\vec{v} = \frac{\vec{d}}{t}$$

- uniformly accelerated motion: changing speed ~~and/or~~ direction

Velocity vs. Time



slope $\vec{a} = \frac{\vec{v}_f - \vec{v}_i}{t}$ or $\vec{v}_f = \vec{v}_i + \vec{a}t$

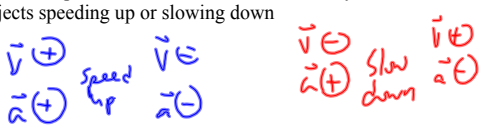
area $\vec{d} = \frac{1}{2}(\vec{v}_i + \vec{v}_f)t$

derived $\vec{d} = \vec{v}_i t + \frac{1}{2}\vec{a}t^2$

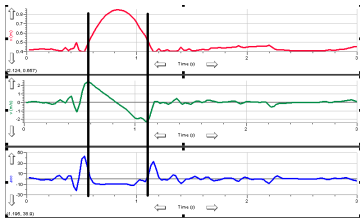
$\vec{v}_f^2 = \vec{v}_i^2 + 2\vec{a}\vec{d}$

* Level 1 - Be able to derive the last two equations given the first two equations.

- relationship between the directions of velocity and acceleration for objects speeding up or slowing down



- be able to pull interpret the "Ball Toss" graphs



- acceleration due to gravity is influenced by a planet's mass and distance from the planet's center.

* $\vec{g}_{Earth} = -9.80\ m/s^2$ if no location is specified

- freely falling bodies -> objects moving vertically up ~~or~~ down
  -> $\vec{a} = -9.80\ m/s^2$ (when air resistance is ignored)

- objects that are dropped may have a $\vec{v}_i$ that is zero, positive or negative