Physics 151 Reading Assignment
for June 11
Sections 3.1 to 3.3

Please notice that this file is two pages long.

3.1 - Using vectors

- Vector has magnitude and direction. The magnitude of a vector is the positive number associated with the vector and gives the "amount".

- Two vectors are equal only if the have the same magnitude and direction

- Vector addition - finding the net result of two or more vectors that take their direction into account

- Graphical addition - putting two vectors tip-to-tail

- Multiplying by a scalar changes the magnitude but not the direction of a vector. One exception - negative scalars also flip the direction by 180°.

- Vector Subtraction - Either follow the procedure in the Tactics Box or simply learn that $\vec{A} - \vec{B}$ points from $\vec{B}$ to $\vec{A}$

3.2 - Using Vectors on Motion Diagrams

- Again the textbook is not being as careful as it should. $\vec{v} = \dfrac{\vec{d}}{\Delta t} = \dfrac{\vec{dr}}{\Delta t}$ should be labeled as the average velocity

- The *Average Velocity* vector points in the direction of the displacement

- The acceleration definition, $\vec{a} = \dfrac{\Delta \vec{v}}{\Delta t}$, is fine if you're doing constant acceleration motion

- An object is accelerating if it changes speed *or* direction

- Notice Example 3. 3, this will come back to haunt us

3.3 - Coordinate Systems and vector Components

- Components, A_x and A_y - pieces of a vector parallel to the two axes. Very important!

- We use trigonometry to get the numerical values of each component. Page 76 contains all the trig. needed for this class

- Using components to do vector addition - essential.