

# PHYSICS 160 READING

## ASSIGNMENT FOR FEBRUARY 1

### SECTIONS 1.7 - 1.9

Please notice that this file is two pages long.

#### 1.7 - Vectors and Vector Addition

- Before we can start chapter 3, we have to take a step back into chapter 1 to learn about vectors and the mathematics of 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 they 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  $180^\circ$ .
- Vector Subtraction - Either follow the procedure in figure 1.14 or simply learn that  $\vec{A} - \vec{B}$  points from  $\vec{B}$  to  $\vec{A}$

## 1.8 - 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 15 contains all the trig. needed for this class
- Using components to do vector addition - essential.

## 1.9 - Unit Vectors

- I'll introduce unit vectors in class, but won't really use them much.  
Someday, though, you'll find them *very* useful.