GIANCOLI READING ACTIVITY
Section 3-4

1. Big Idea(s): The interactions of an object with other objects can be described by forces.

2. Enduring Understanding(s):

   a. All forces share certain common characteristics when considered by observers in inertial reference frames.

   b. Classically, the acceleration of an object interacting with other objects can be predicted by using $\vec{a} = \frac{\Sigma \vec{F}}{m}$.

3. Essential Knowledge(s):

   a. Forces are described by vectors.

      i. Forces are detected by their influence on the motion of an object.

      ii. Forces have magnitude and direction.

   b. If an object of interest interacts with several other objects, the net force is the vector sum of the individual forces.

4. Learning Objective(s):

   a. The student is able to represent forces in diagrams or mathematically using appropriately labeled vectors with magnitude, direction, and units during the analysis of a situation.

   b. The student is able to design a plan to collect and analyze data for motion (static, constant, or accelerating) from force measurements and carry out an analysis to determine the relationship between the net force and the vector sum of the individual forces.

5. Read section 3-4 in your textbook.

6. Write a problem involving the addition of two vectors. The problem must define each of the vectors in terms of magnitude and an angle measurement from the positive x-axis of a coordinate plane.

7. You then must *solve your problem using the Problem Solving guide given on page 53*. Be sure to use *the Problem Solving guide given on page 53* and to *write out all the steps* given in *the Problem Solving guide given on page 53*. You can do this on notebook paper, by typing it in the form below, printing the form below and handwriting your work, or any combination thereof. If using notebook paper, make two columns on your paper. In the left column, write the *Problem Solving steps from the Problem Solving guide given on page 53*. In the right column, demonstrate that step using the problem you created. Feel free to use multiple sheets/forms in the sake of neatness and readability.

8. Answers may be typed or neatly printed. Drawings may be freehand, but try to make use of the 'Shapes' or 'Insert Clipart" functions of MS Word. You are strongly encouraged to practice using the MS Equation function (or equivalent for the Mac Daddies). If you submit this assignment electronically, the filename must be in the following format, "LastnameFirstinitialPerXReadActX-X". You are not required to turn in this instruction sheet with your problem.

Problem: _____

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Problem Solving Process	Illustrated