Advanced Algebra Assignment #7
Unit 9
Working with Trig Ratios:
Section 8.3
Part 2
Please do this part on a separate piece of paper. Draw good diagrams.

1) A boat sails 10 miles from harbor H on a bearing of 30 degrees. .
    a) Draw a diagram of the situation.
    b) What is the vertical displacement from the stating point?
    c) What is the horizontal displacement form the starting point?

2) A ship sails **east** at 3 miles per hour. Another ship sails **south** at 5 miles per hour. They both leave from the same starting point..
a) Draw a diagram of the situation.
b) How far apart are they after 3 hours.
c) Develop an equation to represent the distance at any time t.

3) A ship is moving at a speed of 20 miles per hour from Corpus Texas toward Panama City, Florida. Panama City is 800 miles from Corpus at a bearing of 45 degrees.
a) Make a sketch of the tankers motion, including the coordinate axis.

b) How long does it take to get to Panama City?

c) How far east and how far North is Panama City from Corpus?

4) A plane is flying at 200 miles per hour on a bearing of 45 degrees from the North
a) Draw a diagram of the motion. Write equations for x and y in terms of t to model the horizontal and vertical motion.
b) What range of t is required to display 500 miles of plane travel. T represents time in hours. So fill in _____< t< _____ for this problem.

5) A helicopter pilot flies with a bearing of 147 degrees. When she lands, she is 12 km south of her starting point. How far did she fly?

a) Draw the diagram

b) Solve using trig

6) When an airplane leaves the runway, its angle of climb is 18 degrees and its speed is 275 feet per second. Find the altitude (y displacement) after 1 minute.

a) Draw a diagram of the situation

b) Solve using Trig

7) An airplane flying at 550 miles per hour has a bearing of 52 degrees. After flying for 1.5 hours, how far north and how far east has the plane traveled from its point of departure?

8) Set up a diagram and a **set of parametric equations** for the following: A car is driving of a cliff at 10 meters per second. The cliff is 100 meters high. Make your table for (t,x,y) from 0-10. Does the car hit the ground by 10 seconds. How do you know. (remember the half the force due to gravity is -4.9t^2)