Week 21 Algebra 2 Assignment:

Day 1: pp. 396-398 #1-22
Day 2: pp. 401-403 #1-15
Day 3: pp. 401-403 #16-20, 25-29
Day 4: pp. 407-409 #1-25 odd, 31-35
Day 5: pp. 407-409 #2-26 even

Notes on Assignment:

Pages 396-398:

Work to show:
　　　#1-3: Six answers for each.
　　　#4-15: Answers only
　　　#16-22: Show work needed.

#1-3: Fist use Pythagorean Theorem to find the missing length of the right triangle. Then use SOHCAHTOA (or the definitions in the book or overheads) to find the sine, cosine, and tangent of the angles. Make sure to rationalize any denominators.

#4-5: If you know one of the acute angles in a right triangle, you can figure out the other one quickly, because they must add to 90°. Us your calculator to find the trig values to 4 decimal places.

#6-15: Make sure your calculator is in DEGREE mode and not RADIAN mode. Write answers to 4 decimal places

#6: If you calculator does not allow you to enter degrees and minutes, then you will need to change the angle to decimal degrees. To do this, make the following calculation on your calculator:

$$38°10' = 38 + \frac{10}{60} = 38° + 0.1667° = 38.1667°$$

(Always put your minutes over 60 to change it to degrees.)

#16-20: It would be helpful to draw these triangles.

#21: If your calculator does not do this directly, you must take the fractional part of the angle (.28) and multiply it by 60 to change it to minutes. Then repeat the process, multiplying the fractional part of *that* number times 60 to change it to seconds.

#22: If your calculator does not do this directly, you must change it to decimal degrees following the procedure above in #21.

Pages 401-403:

#1-10: Use the inverse trig buttons on your calculator. They look like $\sin^{-1}$, $\cos^{-1}$, $\tan^{-1}$. On graphing calculators you usually press the button, type in the trig value, and then press Enter. For non-graphing calculators you usually type in the trig value and then press the button. (Make sure your calculator is in DEGREE mode.) The angles are to be given in degrees and minutes, so you will need to take the fractional part of your answer and multiply it times 60 to change the fractional degree part into minutes.

#11: Set up an equation based on the information given. You know an angle and the adjacent leg. From this you could get $\cos 38° = \dfrac{5}{c}$ or $\tan 38° = \dfrac{a}{5}$. Pick one of them, use your calculator (and some algebra), and solve. You can either use the value you just found in another equation to find another missing part, or use the 2nd of the 2 equations to find another value. There are many combinations.

#12: You know that you must have $\sin A = \dfrac{12}{25} = .48$. Use the $\sin^{-1}$ function on your calculator to find $\angle$A. You can find b by using the Pythagorean theorem, or you can find the angles first and then use b as an unknown in one of the trig equations.

#16-20: These are 5-step word problems.

#16: Remember that the angle of depression is the angle formed below the horizontal sight line of the plane.

#20: You will have to use the $\sin^{-1}$ function on your calculator to find the angle measure.

#25-26: This involves absolute value (the linear distance formula)..

#27-28: This involves the distance formula.

#29: This is an extension of the distance formula.

<u>Pages 407-409</u>:

Work to show:
   #1-18: Answers only.
   #19-22: Show the trig ratio formula, then work out.
   #23-26: Show Pythagorean Theorem solving then the trig ratios.
   #31-35: Answers only.

#1-10: These all come from the values that I told you in class that you must memorize!

#11: Since secant is the reciprocal of cosine, to find the secant of an angle, you need to first find the cosine, and then find the reciprocal of it. (In other words, find the cosine, and then "flip it over.") On your calculator, you should have a button that either looks like [x^{-1}] or [1/x]. Both of these buttons will give you the reciprocal of your number.

#12: If $\cot A = 1.71$ then $\tan A = \dfrac{1}{1.71}$ (since they are reciprocals). Find angle A using the tangent equation and the tan^{-1} function of your calculator.

#19-22: Leave all of these answers in radical form.

#23-26: Find the missing side length, and then use the definitions of the 6 trig functions to find their values. Rationalize denominators and leave in radical form.