Week 11 Pre-Calc Assignment:

Day 1: pp. 278-79 #1-39 odd
Day 2: pp. 278-79 #43-55 odd, 65—67 odd
Day 3: pp. 297-99 #1-57 odd
Day 4: pp. 297-99 #59-89 odd, 91a, 91b, 93, 95, 101-109 odd

Notes on Assignment:

Pages 278-279:

#1-3: Assume this is a unit circle. Then for any point (x, y) we have $x = \cos\theta$ and $y = \sin\theta$.

#5-11: Use the unit circle and leave all coordinates in radical form.

#13-21: From the point on the unit circle you will know what the sine and cosine are. You will have to find tangent by $\sin\theta/\cos\theta$.

#23-27: Do these the same as #13-21, but also find the other 3 trig functions using your knowledge of reciprocal functions.

#29-35: Take off the complete rotations and find the coterminal angle. The coterminal angle gives the same trig values as the original angle.

#37-39: Refer to the box on p. 277 about even and odd functions for this.

#43-51: Make sure your MODE is set to the appropriate angle measure for each problem.

#53: You may want to print the math graph from your Pre-Calculus cd for this problem. The circle has all of the real number approximations on it instead of π/2, π, etc. So for a problem like sin 5 you would find 5 on the circle, and then figure out what the coordinates of that point would be. Then since you are finding the sine, you need to list the y-coordinate as your answer. Do the same for part (b).

#55: Use the same math graph for this problem as you did for #53. For part (a), if the sine is 0.25, that means that the y-coordinate must be 0.25. Find the points on the circle that have 0.25 as their y-coordinates (there will be 2 of them). List the radian measures around the circle that give you these 2 coordinates. Do the same for part (b).

#65-67: Remember that to find the inverse of a function, we switch the x and y and then solve for y.

Pages 297-299:

#1-9: Use $r = \sqrt{x^2 + y^2}$ to find the value of *r*. Then use the definitions on page 291 to find the trig values for all 6 trig functions.

#11-13: Use allsintancos.

#15-23: You will need to refer back to the identities on page 283 for these. You will also have to use the constraint and allsintancos to get the correct sign on your answers.

#25-27: Using the equation, find any point on the line that would be in the quadrant designated. For example, the point (3, -3) is a point on the line y = -x, but it is in the 4th quadrant and we want a point in the 2nd quadrant. After finding a point, follow the same procedure as you did in #1-9 to find *r* and then the trig function values.

#29-31: Use the unit circle.

#45-57: Use the unit circle.

#69-73: Find the reference angle that will give you the indicated trig value. Then using allsintancos, determine which other reference angles will give the same trig value. Your answer will be the coterminal angle between 0° and 360° or between 0 and 2π that the reference angle belongs to.

#75-77: Use the [2nd] function with the trig buttons to get the angle. You are told to have your calculator in Degree mode. Again, using allsintancos, determine which other reference angles will give the same trig value. Your answer will be the coterminal angle between 0° and 360° that the reference angle belongs to.

#79-83: Use the [2nd] function with the trig buttons to get the angle. You are told to have your calculator in Radian mode. Again, using allsintancos, determine which other reference angles will give the same trig value. Your answer will be the coterminal angle between 0 and 2π that the reference angle belongs to.

#85-89: You will need to refer back to the identities on page 283 for these. You will also have to use allsintancos to get the correct sign on your answers.

#91a): Put the table values into 3 lists. Press [STAT] [Edit] to get to the lists. Use L1 for the variable t, which refers to the month, L2 for the corresponding temperatures in New York, and L3 for the corresponding temperatures in Alaska. Remember that the value for April in L1 will be 4, since April is month 4, and so on. After they are entered, find the sine regression model for each city by pressing [STAT] [CALC]

[SinReg] [ENTER]. At the prompt on the screen, enter L1, L2, Y1 and press [ENTER]. (Remember that L1 and L2 are the 2nd functions of the 1 and 2 keys. To get Y1, you must press [VARS] [Y-VARS] [Function] [Y1].) You will be given the values for your equation, and the fuction is also stored in Y1 of the [Y=] screen. This is the equation for New York. Repeat the process entering L1, L3, Y2 for the equation for Alaska.

#91b): Use the TABLE feature for this, since we already have the equations stored in Y1 and Y2. Press [TBLSET] and for Indpnt: choose "Ask." It doesn't matter what the other values are set at. Then press [TABLE]. You can then put in the values you want for x. Remember that in our problem, we are using t instead of x, so you will enter values for t. Since January corresponds to t = 1, then February must be t = 2, etc. Put 2 into the table and press [ENTER]. The month will be listed under X, New York's temperatures will be under Y1, and Alaska's will be under Y2.

#93-95: For these problems you can either enter the equation each time for the different values for t, or enter the equations into [Y=] and use the [TABLE] function as you did for #91. Make sure you clear your [Y=] before you start each problem.