Week 1 Pre-Calc Assignment:

Day 1: pp. 9-11 #1-37 odd, 45-55 odd
Day 2: pp. 9-11 #57-59 odd, 65-69 odd, 73a,c,d, 75, 79, 83-89 odd
Day 3: pp. 21-25 #1-43 odd, 45a
Day 4: pp. 21-25 #47-81 odd
Day 5: pp. 21-25 #87, 91, 93, 99, 107-111 odd, 115, 129-137 odd

Notes on Assignment:

Pages 9-11:

#11-19: Put 0 in for x and solve for y to find the y-intercept. Put 0 in for y and solve for x to find the x-intercept.

#21-27: Put (x, -y) in to test for x-axis symmetry. Put (-x,y) in to test for y-axis symmetry. Put (-x,-y) in to test for origin symmetry. If putting one of these points in gives an equation equivalent to the original, then it has that symmetry.

#29-31: Use the Math graphs from your CD

#33-37: Test for the symmetries first. Then graph a few points and reflect them to find additional points.

#45-55: Graph the equations using the [y=] and [graph] buttons. Then use the CALC function ([2^{nd}][Trace]). Choose [Value] and put in 0 to find the y-intercepts. Choose [Zero] to find the x-intercepts. Remember that it will ask you for a left boundary first. Use the left and right arrow keys to close in on the area where it crosses the x-axis to the left of the point where it crosses. Hit [ENTER]. Do the same for the right boundary. Then when you see "Guess?" you hit [ENTER] again to find the value.

#49: This graph may show a vertical like when you graph it (depending on your settings). That vertical line is an asymptote, not part of your graph. There is only one place where it crosses the x-axis. Find that point.

#51: Use the MATH button to get the cubed root function.

#53: Use [2^{nd}] [x^2] to get the square root function

#55: Press [y=] and then [MATH]. Use the right arrow to highlight NUM. Then choose [abs] (option 1). This is the absolute value function.

#73a,c: To graph this, think of A=x(6-x) as y=x(6-x), because your graphing calculator always uses "y=" and you can't change it to another letter.

#73d: Use the CALC function ([2nd][Trace]) and then [maximum] to find the maximum value. As you did for #45-55, use the left and right arrows to set the boundaries. But this time you set the left boundary just to the left of the highest point on your graph. Set your right boundary just over to the right of the highest point. Round your answer to the nearest whole number.

#75: I would like you to do this on your calculator. Before we get started, let me remind you that whenever you find yourself stuck somewhere in a calculator menu you can always use the [quit] function (press [2nd] [MODE])

Follow these steps for the problem:

#75a: [STAT] [ClrList] L1, L2 (push [2nd] [1],[2] for L1 and L2) [ENTER] This clears the 2 lists from memory. You should see the word "Done" on your screen.

Next, press [STAT] [Edit] to get to your lists. In L1 enter the numbers 20 to 100 for the year. Press the right arrow to jump to L2. Enter the corresponding life expectancy from the table into list L2.

Now you need to set your window. Press [WINDOW] to see the current settings. Enter the following:

Xmin = 20
Xmax = 110
Xscl = 10

This will cover our range of values for x, and will put marks every 10 units along the x-axis.

Ymin = 50
Ymax = 80
Yscl = 10

This will cover our range of values for y.

Now you need to tell the calculator to plot this. Press [2nd] [Y=] to get to the STAT PLOT area. Select [1]. As you move your cursor around the settings, what is blinking is what you are selecting. Press [ENTER] to enter the selection once you have it blinking. For example, the word Off is probably black. It is probably blinking on the word On. Since we <u>do</u> want this Stat Plot on, we want the On to be blinking when we press [ENTER]. After pushing [ENTER] you should notice that now the On is black. You need the following settings:

On (this turns the Stat Plot on, which means it will graph it)
Type: dots (this is the first option)
XList: L1 (where we have already stored our x-values)
YList: L2 (where we have already stored our y-values)
Mark: the little square (this is the dot shape that will be on our graph)

Now before we actually graph this, make sure that your [Y=] equations are all cleared, so they don't graph on top of our scatter plot. Pres [Y=] and clear any equations entered.

Press [graph] and you should see a scatter plot similar to the one in the answer key.

#75b) We want to graph the equation on top of our scatter plot to see how close the equation matches our data. To do this, press [Y=] and enter the equation given. Press [graph] to see the curve. Notice how close it is to the scatter points.

#75c) Use the [CALC] function [2^{nd}] [trace] and then [value] as we did earlier in the assignment. Find the value when x=105 and x=110.

#75d) To answer this, we need a better view of the graph. We are going to zoom out so we can see more of the curve, so we can tell whether it would be a good model for 50 years from now. To zoom out, press [zoom] [zoom out]. If you just finished part c) above, then the cursor is blinking around the x=110 spot on the graph. You can use the arrow to move the cursor to the spot where you want to zoom in on. x=110 is a good spot. When you have the cursor there, press [enter]. You will still see your scatter points, but you will also see what the curve does over the long run. Answer the question now.

Pages 21-26:

#5-7: Take any 2 points on the line and estimate the rise and run between them. Use these to find the slope.

#9-19: Put these in slope-intercept form first (y = mx + b). Then you can easily find the slope and y-intercept, and then graph it.

#21-27: You can either count units of rise and run, or do $\Delta y/x\Delta$ (subtract y's on top and x's on the bottom).

#29-37: Keep using rise/run for more points.

#39-41: Find the slopes using $\Delta y/x\Delta$ and then compare them.

#45a): You will have to find 10 slopes to determine the answer.

#47: Do this problem on paper and not on the calculator.

#47e): Take your slope and change it to a percent.

#97-99: Before doing these problems you need to turn the STAT PLOT off. To do this, press [2nd] [Y=] and then select [1]. Highlight Off and press [enter]. Then to reset your viewing window, press [zoom] [standard]. (Note: Anytime you get your window all messed up, you can always use this action to reset it.)

To make the slopes of the lines in #97-99 appear correct visually on your calculator, you must adjust your viewing window. The default is a rectangle, in which the spacing between x units is greater than that of y units. To make this window square, press [zoom] [ZSquare]. Then enter all 3 equations in [Y=] so they graph at the same time.

#107: Your points are (1998, 28500) and (2000, 32900). Find the equation through these points. Then plug in 2005 for x and see what the y (salary) would be.

#109: At year 0 the value is $875. At year 5 the value is $0. Use (0, 875) and (5,0) to find the equation of the line. (Note: You are supposed to use V for the equation to stand for Value. This will take the place of the standard "y". You may also want to put in a "t" instead of "x" to stand for time.)

#115c) Set the window with the following ranges:

Xmin = 0
Xmax=10
scale=1
Ymin=0
Ymax=150
scale=10

#115d): You should just look at your equation to figure out the slope. Then answer the other part of the question.