Week 4 Pre-Calc Assignment:

Day 1: pp. 83-86 #1, 3, 13-21 odd, 25-37 odd, 55-61 odd
Day 2: pp. 93-98 #1, 9, 13-15 odd, 23, 25, 31-39 odd, 41, 47-53 odd, 59, 67, 73
Day 3: pp. 100-103 #5-11 odd, 13-17 odd, 21, 23, 29-33 odd, 37-49 odd, 55-65 odd,
   81-93 odd, 97-107 odd, 115
Day 4: Chapter 1 test

Notes on Assignment:

Pages 83-86:

#13-21: For part (a) you need to show that $f(g(x)) = x$ and $g(f(x)) = x$. For part (b) you need to sketch each graph. They should be reflections of each other over the line $y=x$. Use your calculator to help you sketch the graph on paper. You can graph it on your calculator first, or you can enter the equation and use the [TBLSET] and then [TABLE] to get a table to graph from.

#29-37: Use the Horizontal Line Test on all of these. You do not have to find the inverse, just tell whether the inverse would be a function (which means that there IS an inverse function.)

Pages 93-98:

#1: Graph the ordered pairs first. Then graph the equation of the line by making an x-y table with 3 points.

#13-15: Take the first set of x-y coordinates and find the direct and inverse variation equations. Then put in the next x-value of the table and see which equation gives you the desired y-value.

#23: You can either consider this as the number of inches varying directly as the number of cm, or the number of cm varying directly as the number of inches. Both will give you the correct answer. But since you are supposed to find the number of cm with the given number of inches, it would be easier to find the direct variation equation considering cm varying directly as the number of inches.

#67: After you sketch your line, use the y-intercept for b and figure your slope by picking 2 points on your line and finding the change in y over the change in x.

#73a: When you do the scatter plot, you can either use L1 for the Year and L2 for the Receipts, or you can make new lists and call them YEAR and R. Use [STATPLOT] and then [GRAPH] to see your stat plot. To get the correct window, press [ZOOM] [ZoomStat].

#73b: When you do the linear regression on the calculator, you can assign the equation to Y1 so that it's ready to graph by doing the following: Press [STAT] [CALC] [LinReg(ax+b)]. You need to enter the 2 lists separated by a comma, and then Y1. To do this, enter "L1,L2," and then press[VARS] [Y-VARS] [Function] [Y1]. Press [ENTER] to get the equation.

#73c: If you did part (b) as instructed, all you should have to do is press [GRAPH] to see the graph of your model equation show up with your scatter plot.

Pages 100-103:

#5-7: To find the x-intercepts let y = 0. To find y-intercepts let x = 0.

#9-11: Test for symmetries. Remember that if you can put in –x for x and get an equivalent equation, then your graph is symmetric with respect to the y-axis. If you can put in –y for y and get an equivalent equation, then your graph is symmetric with respect to the x-axis. If you put in –x and –y for x an y and you get an equivalent equation, then your graph is symmetric with respect to the origin.

#17: Find the midpoint of the diameter for the center of your circle. Find the distance from the center to one of the other points for your radius. (Use the distance formula.)

#29-39: To find the equation of a line you always need the slope first. Then put the slope and one of the points into y=mx+b and solve for b.

#41: Think of rise/run. How much of a rise is there for every year?

#43-45: Solve for y and then use the function machine.

#59-61: Remember that when we find zeros we are actually finding the x-intercepts, which means let y=0 (ie. let f(x) = 0) and solve for x. If it's a quadratic, solve by factoring or the quadratic formula.

#65: Remember that even functions are symmetric with respect to the y-axis. Odd functions are functions that are symmetric with respect to the origin. (See notes for #9-11 above).

#97: Enter the table information into 3 lists and do a quadratic regression on your calculator.

Chapter 1 Test

What to know for the test:

- Find x- and y- intercepts.
- Write the standard form of the equation of a circle given 2 endpoints of a diameter.
- Find the equation of a line given:
    - 2 points
    - A point and a parallel line.
    - A point and a perpendicular line.
- Evaluate values for a piecewise function.
- Determine the domain of a function.
- Use your graphing calculator to find zeros (x-intercepts) and y-intercepts.
- Determine whether a function is odd, even, or neither.
- Graph a piecewise function.
- Identify transformations and graph one.
- Arithmetic combinations of functions (adding, subtracting, multiplying and dividing functions)
- Compositions of functions (gof and fog) for specific x-values and general equations.
- Find the inverse of a function and be able to tell if the inverse is a function.
- Direct, Inverse, and joint variations. Find the constant of variation, k, and then find other values.
- Given a table of data, find the regression line (y = ax + b) of best fit. (Put the table values in 2 lists, and then calculate the regression formula using the STAT >CALC> feature like we did in class this week.