MATH 1720
Fall, 2003

Extra Credit Project

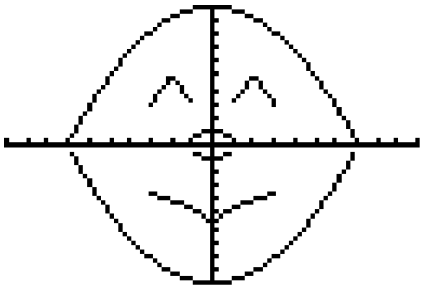
This may be turned in as late as the day of the final exam.

You may do this activity with one or two partners.

Create a picture on a graphing calculator using transformations (shifts, reflections, compressions, stretches) of functions or non-functions. You may need to use piecewise functions and will definitely need to restrict domains.

Use at least five equations. Turn in a list of the equations used along with a drawing of what you graphed. Even better than a drawing, you may use the TI Connect or GraphLink software and hardware and print it out that way. (I have that in my office, and you're welcome to use it. Bring a floppy, CD, or 100 meg Zip disk if you want to save the picture.)

Example using a TI-83 Plus: Here is a sample picture along with the functions graphed. Use a / (divided by) followed by things like `(x > 3 and x < 7)` to restrict the domain. (To get > or <, go to the TEST menu [y] and choose the appropriate symbol. To get `and`, go to the TEST menu and arrow over to `LOGIC` to pick and.)



Y_1 = -.2x^2 + 10 / (x > -7 and x < 7)
Y_2 = .2x^2 - 10 / (x > -7 and x < 7)
Y_3 = -abs(2x - 4) + 5 / (x > 1 and x < 3)
Y_4 = -abs(2x + 4) + 5 / (x > -3 and x < -1)
Y_5 = ð(2x)-6 / (x > 0 and x < 3)
Y_6 = ð(-2x)-6 / (x > -3 and x < 0)
Y_7 = ð(1 - x^2)
Y_8 = -ð(1 - x^2)

Using the TI-89 Calculator:
To get this picture, you would use the same functions as above. There are some differences in putting these into your calculator. To put in the first function above, you would put in
Y_1 = -.2x^2 + 10 | x > -7 and x < 7
To get and, press ½ or A to get to those words, or press j twice and actually type in the word and using the purple letters above the keys. You'll also need to put in a space (, which is above the (-) key.) before and after the word and. When it is entered it will show up a little differently on the screen.

Since Y_1 is the opposite of Y_2, on the TI-89 we can type Y_2 = -Y_1(x).