

Project for M505G (57770) Due 12/4/2008

**General Information:** The purpose of this project is to investigate one function that is used to encode information for a subjective purpose. This project will be worth 5% of your final grade. Your grade will be determined by: 1) the fulfillment of the requirements, 2) the clarity of your explanations (including grammar), and 3) the quality of your analysis.

Functions describe the world often providing insight into natural phenomena. They also can be used to sum up a lot of varied data to provide some kind of subjective insight into that data. Sometimes this summary is beneficial and some this summary is unnecessarily complicated and ultimately worthless. Your goal for this paper is to analyze a function that measures some kind of data and describe that function.

**Requirements:** Start by choosing a function with more than one independent variable. In addition to stating the function in its general form, your explanation should include 1) a general description of the function and what is supposed to do, perhaps even a brief history of how it came about 2) the domains for individual variable that the function depends on 3) the range of the function 4) 2-3 graphs of the function where all but one variable are fixed 5) the parts of the domain where the function is a good and bad measure of what the function is supposed to do 6) whether in your opinion the function does a good or poor job of doing what it was created to do.

It is expected that your project be 2-3 pages double-spaced (not including graphs). Graphs may be hand drawn but should be well-done, neat, and informative. Have it printed out for me on the due date and sent to me electronically as it will be posted on my website for the class to see.

Have your function chosen and approved by me by November 25th. Some example of functions you might like to choose are:

From Economics and Finance

- 1) The Human Development Index (see [http://en.wikipedia.org/wiki/Human\\_Development\\_Index](http://en.wikipedia.org/wiki/Human_Development_Index))
- 2) Income taxes under a progressive system
- 3) Property taxes in Travis county/Austin
- 4) Credit score under one of the of the scoring methods ([http://en.wikipedia.org/wiki/Credit\\_score#United\\_States\\_of\\_America](http://en.wikipedia.org/wiki/Credit_score#United_States_of_America))
- 5) The amount of mortgage you qualify for
- 6) Bond rating

From Sports

- 1) BCS Score\*
- 2) Quarterback rating

Other functions

- 1) Body Mass Index BMI
- 2) US news rankings for Colleges/Universities
- 3) Pot odds in poker
- 4) How poems are measured in the pages ripped out in *Dead Poets Society*

Or any other function that you are interested in. Just make sure it's approved by me.

\* See me if you want to do this.