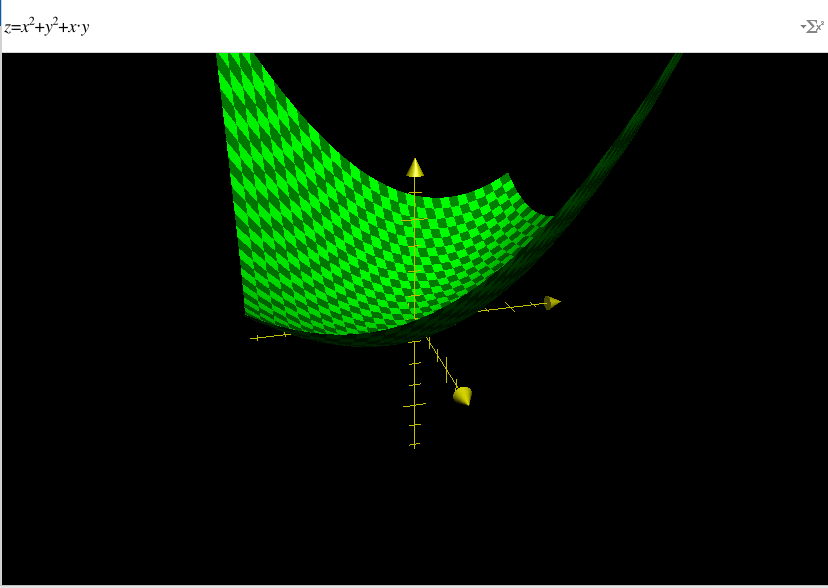
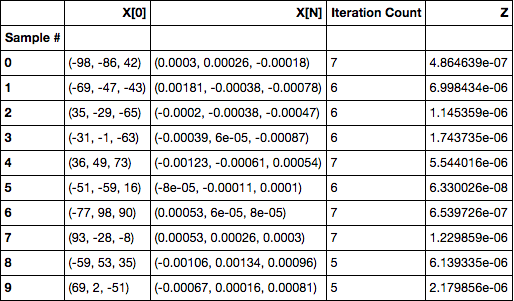
**IMSE 982 Final Project**

**Blake Conrad**

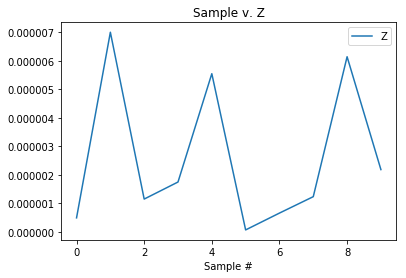
Problem 1: Quasi-convex function: Hyper-bowl;

*If we held z as a constant, we can try to visualize what this function looks like in the images below:*





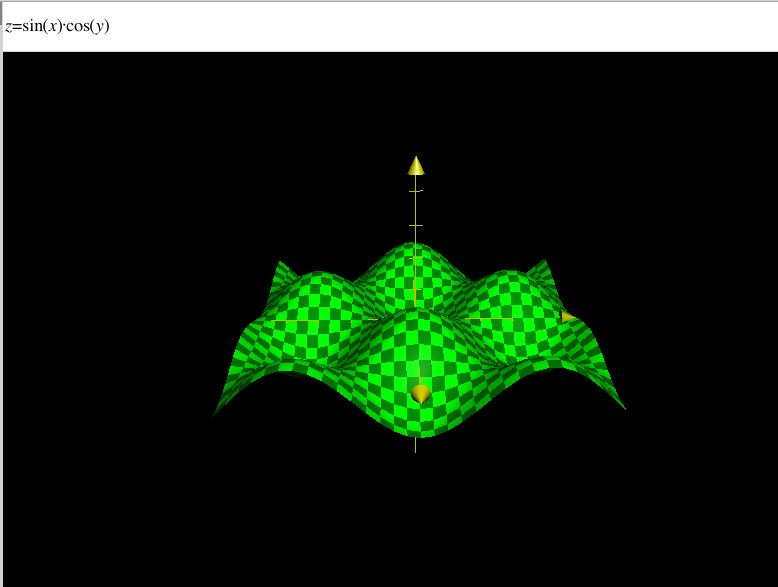
The z values are beyond the billionths place (5 0’s), hence these are sufficiently close to one another illustrating a global optimal from our convex function f.

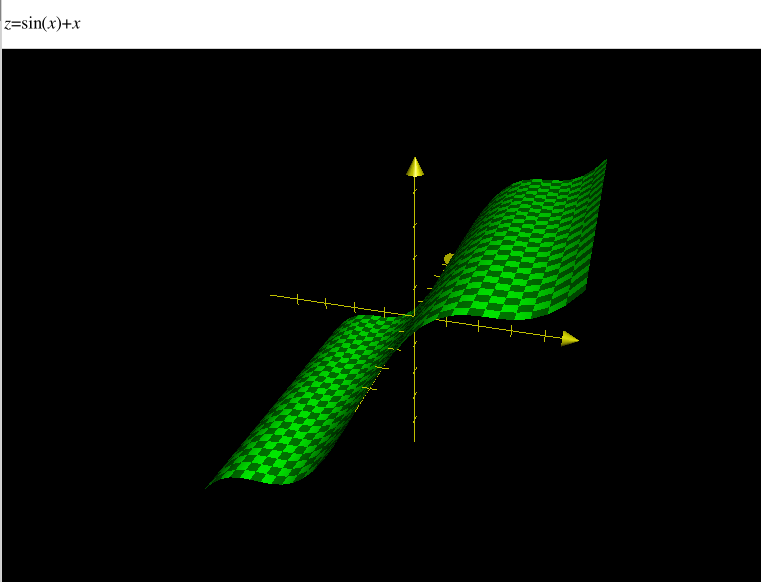


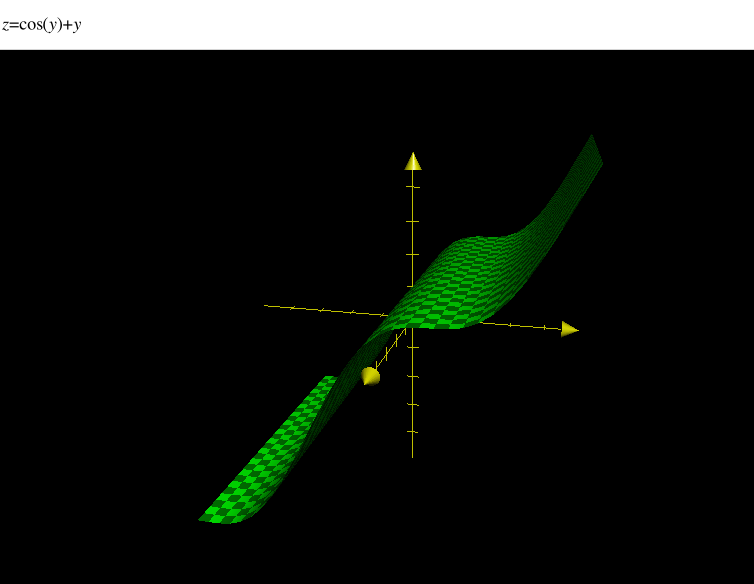
distance in millionths place

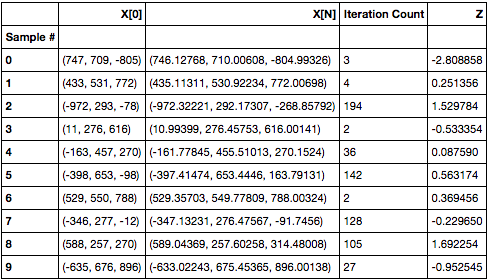
Problem 2: Multiple KKT function: Periodic Wave Function;

Each dimension will reflect the underlying wave shape below:









We see optimal solutions everywhere from -3 to 1 and in between. Hence, we are dealing with a multiple KKT points and have a sample of 10 different local minima on f.

