COSC 4370 – Homework 1

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1 Problem

In this assignment, I will be implementing an algorithm for rasterizing eclipse. I will be rasterize the eclipse (x/12)^2 + (y/6)^2 = 64^2 where y>=0.

2 Method

There were two functions that needed to be modified in the provided code: main.cpp, BMP.h. It was not needed to edit the whole part of the code, only a very small portion of it. For the assignment, it is to learn how to make a "change" from a straight line to an eclipse. However, only showing y positive values in the output image.

3 Implementation

We will be using the midpoint formula and eclipse formula to help us achieve the goal. However, I can no longer explain due to not being able to finish the code. We can assume that the eclipse center is to be at the origin and the pixel coordinated in other regions can be obtained by symmetric characteristic. For a pixel (x, y) in the first quarter, the corresponding pixels in other three quarters are (x, –y), (–x, y) and (–x, –y) respectively.

I can't explain what I did on main.cpp or BMP.h since I didn't had time to code it. I completely forgot and it is 11pm at night and I am trying to do the report portion hoping for some credit. I do want to apologize for it.

4 Result

If the coding went well, and you calculated everything in math terms within the code. You should get an image that looks like this: