CSC 204
Assignment 3 - Geometric Calculator
Due Monday February 6, 2017

This is a programming assignment where you will need to start from nothing and create a Java program. You may model this program around the examples we have done and around some labs. You will, however, need to write this entire program and you should comment it well. Your comments should include good header information including your name, the date and a description of what is going on. You should also give comments along the way describing what you are doing. You should save this work in your Orion-Eclipse workspace, in a new Java Project named "GeoCalc".

Here is what your program should do. This program will assist you by performing some mathematical calculations pertaining to two Cartesian points obtained from the user. Your program should first print a nice little header across the top of the page something like:

```
Your-Name's Geometric Calculator
*****************************
```

It should then proceed to prompt the user to enter the x and y coordinates for two points on the Cartesian plane. These coordinate values should be stored in `double` variables in Java. You may do this in four lines (one for each value). Make sure that your code converts the input "String" into an actual double. After these two points have been obtained, your program should then calculate and display the following:

1. Distance between points A and B stating their coordinates in proper format (x,y),
2. Given that A and B are opposite corners of a rectangle
    - List the coordinates of the four corners of the rectangle
    - Give the width of the rectangle,
    - Give the height of the rectangle,
    - Give the perimeter of the rectangle,
    - Give the area of the rectangle.
3. Given that A and B are endpoints of a diameter of a circle
    - List the coordinates of the center point of the circle,
    - Give the radius of the circle,
    - Give the diameter of the circle,
    - Give the circumference of the circle,
    - Give the area of the circle.

There is a sample output of what this program *might* look like on the next page. Your output may look different; however, your program will be graded by how well it meets the specifications of this assignment. You should feel free to add more features to this program.

```
                    Bob's Geometric Calculator
              **************************

Please enter the x coordinate for Point A: 0
Please enter the y coordinate for Point A: 0
Please enter the x coordinate for Point B: 3
Please enter the y coordinate for Point B: 4

The distance between (0.0,0.0) and (3.0,4.0) is: 5.0

The rectangle with coordinates:
(0.0,0.0) (0.0,4.0) (3.0,4.0) (3.0,0.0)

        has a width of:         3.0
        has a height of:        4.0
        has a perimeter of:     14.0
        has an Area of:         12.0

The circle with points A and B at ends of a diameter:
        has its center at:      (1.5,2.0)
        has a radius of:        2.5
        has a diameter of:      5.0
        has a circumference of: 15.707963267948966
        has an area of:         19.634954084936208
```

Note that the `highlighted` values above were entered by the user.

Deliverables:
When complete, you should upload the src folder from this Eclipse project to your shared Google folder and rename it "GeoCalc".   Have fun and enjoy!!