Lab3 (15pts)

Part A (15pts)

The following formula gives the distance between two points, (x1, y1) and (x2, y2) in the Cartesian:

Given the center and a point on the circle, you can use this formula to find the radius of the circle. Write a program that prompts the user to enter the center and a point on the circle. The program code must be in a file with a .py extension (python script). Name your program file as follows: firstInitial\_LastName\_lab3.py

e.g. p\_saweh\_lab3.py

The program should then output the circle’s radius, diameter, circumference, and area. Your program must have at least the following functions:

Hint: π = 3.1416

1. **distance:** The function takes as its parameters four numbers that represent two points in the plane and **returns** the distance between them. Here is the formula:
2. **radius:** The function takes as its parameters four numbers that represent the center and a point on the circle, calls the function distance to find the radius of the circle, and returns the circle’s radius: Here is the formula: r = distance/2
3. **circumference**: This function takes as its parameter a number that represents the radius of the circle and returns the circle’s circumference. Here is the formula: c = 2πr. Note: r represents the circle’s radius.
4. **area:** This function takes as its parameter a number that represents the radius of the circle and prints the circle’s area. Here is the formula: A = πr2. Note: r represents the radius

Part B

Complete the Problems listed in this document. These Problems are at the end of chapter 4 in the textbook.

**Exercises**

Each Problem must be completed at the python interactive shell (IDLE). These problems contain multiple steps. Submit a screen shot showing the command(s) entered for each step in a problem and the result of the command(s). Take a screen shot of the steps completed for each exercise and paste it into a word document. To minimize the size of the document containing the screen shots, submit one screen shot for each problem. i.e. Instead of taking a screen shot after each step in a problem, complete all steps in a problem and submit one screen shot showing all work completed for the problem. **Only one screen shot is required for each problem**; **however, there must be a separate screen shot for each problem**.

Submit the word document (No other document format will be accepted) containing your screen shots into D2L.

Use the following naming convention: firstInitial\_lastName\_wk#\_lab#\_B.doc (or the extension could be docx). For example, if I am student Paul Saweh, and I am submitting my lab; I will name my document as follows: **p\_saweh\_wk4\_lab3\_B.doc** or **p\_saweh\_wk4\_lab3\_B.docx**

**Complete the following problems at the end of chapter 4**

Problem 4.16

Include the screen shots for exercise 4.16 below (5pts)

Problem 4.25

Include the screen shots for exercise 4.25 below (5pts)