

ITC LAB #11 CS(B)

LAB TASK

1. Write a value-returning function, isVowel, that returns the value true if a given character is a vowel and otherwise returns false
2. Write the definition of a function that takes as input three numbers and returns the sum of the first two numbers multiplied by the third number. (Assume that the **three numbers are of type double**.)
3. The following formula gives the distance between two points, (x1, y1) and (x2, y2) in the Cartesian plane:

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

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

- a. distance: This function takes as its parameters four numbers that represent two points in the plane and returns the distance between them.
 - b. radius: This 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.
 - c. circumference: This function takes as its parameter a number that represents the radius of the circle and returns the circle's circumference. (If r is the radius, the circumference is $2\pi r$.)
 - d. area: This function takes as its parameter a number that represents the radius of the circle and returns the circle's area. (If r is the radius, the area is πr^2 .)
Assume that $\pi = 3.1416$.
4. During the tax season, every Friday, J&J accounting firm provides assistance to people who prepare their own tax returns. Their charges are as follows.
 - a. If a person has low income ($\leq 25,000$) and the consulting time is less than or equal to 30 minutes, there are no charges; otherwise,

the service charges are 40% of the regular hourly rate for the time over 30 minutes.

- b. For others, if the consulting time is less than or equal to 20 minutes, there are no service charges; otherwise, service charges are 70% of the regular hourly rate for the time over 20 minutes

(For example, suppose that a person has low income and spent 1 hour and 15 minutes, and the hourly rate is \$70.00. Then the billing amount is $70.00 * 0.40 * (45 / 60) = \21.00 .)

Write a program that prompts the user to enter the hourly rate, the total consulting time, and whether the person has low income. The program should output the billing amount. Your program must contain a function that takes as input the hourly rate, the total consulting time, and a value indicating whether the person has low income. The function should return the billing amount. Your program may prompt the user to enter the consulting time in minutes.