1. Suppose x, y, and z are int variables and ch is a char variable. Consider the following input: 78 86 18 #42 &   
     
   What value (if any) is assigned to x, y, z, and ch after each of the following statements executes? (Use the same input without changing the order for each statement and run each statement separately)

cin >> x >> y >> z >> ch;

cin >> ch >> x >> y >> z;

cin >> x;

cin.get(ch);

cin >> y >> z;

cin >> x >> ch >> y >> z;

cin.get(ch);

cin >> x >> y >> z;

1. Consider the following incomplete C++ program:

A picture containing text

Description automatically generated

1. Write a statement that includes the header files fstream, string, and iomanip in this program.
2. Write statements that declare inFile to be an ifstream variable and outFile to be an ofstream variable.
3. The program will read data from the file inData.txt and write output to the file outData.txt. Write statements to open both files, associate inFile with inData.txt, and associate outFile with outData.txt.
4. Suppose that the file inData.txt contains the following data:

Text

Description automatically generated with medium confidence

* The first line contains a person’s first name, last name, and the department the person works in.
* In the second line, the first number represents the monthly gross salary, the bonus (as a percent), and the taxes (as a percent).
* The third line contains the distance traveled and the traveling time.
* The fourth line contains the number of coffee cups sold and the cost of each coffee cup.

Write statements so that after the program executes, the contents of the file outData.txt are as shown below. If necessary, declare additional variables. Your statements should be general enough so that if the content of the input file changes and the program is run again (without editing and recompiling), it outputs the appropriate results.

Text

Description automatically generated

1. Write statements that close the input and output files.
2. Write a program that prompts the user to enter the weight of a person in kilograms and outputs the equivalent weight in pounds. Output both the weights rounded to two decimal places. (Note that ‍‍1‍kilogram=2.2‍pounds .) Format your output with two decimal places.
3. Paula and Danny want to plant evergreen trees along the back side of their yard. They do not want to have an excessive number of trees. Write a program that prompts the user to input the following:
4. The length of the yard.
5. The radius of a fully grown tree.
6. The required space between fully grown trees.

The program outputs the number of trees that can be planted in the yard and the total space that will be occupied by the fully grown trees. (The area of a tree is computed the same as an area of a circle)