Question 1 : The area is the two-dimensional amount of space that an object occupies. Area is measured along the surface of an object and has dimensions of length squared; for example, square feet of material, or centimetres squared.

The area of a rectangle is equal to the height h times the base b; A = h * b

The equation for the area of a trapezoid is one half the sum of the top t and bottom b times the height h; A = h * [t + b] / 2

The area of a circle is A = pi * r2, where pi = 3.14 and r = radius.

Develop a program in C++ using function overloading for computing the area of a rectangle, a trapezoid and a circle by a common function name ComputeArea() with different signatures. Assume pi = 3.14. Print only two decimal places for all areas.

Note:

To print only two decimal places of a variable ‘a’, do the following:

#include

cout<<fixed<<setprecision(2)<<a;

Input Format:

Read the base and height of a rectangle.

Read the top, bottom and height of a trapezoid.

Read the radius of a circle.

Output Format:

Display the area of a rectangle, trapezoid and circle each in one line

Boundary Conditions:

You can give any valid integer or float values for inputs.

Test Case 1:

10 5

10 10 4

5

Output:

50

70

49.30

Test Case 2:

12 7

12 12 6

7

Output:

84

108

69.07

Question 2: C++ Program to store GPA of n number of students and display average of it where n is the number of students entered by the user using new and delete Operator for Arrays. The average should be printed till 2 decimal points.

Input:

Read the n value for the number of students.

Read the GPA of n number of students.

Output:

Display the average GPA of the class.

Test Case 1:

5

3 3.4 3.6 3.2 2.3

Output:

3.1

Test Case 1:

4

3 3.9 3.4 3

3.33