Lab 3 Introduction to PASS, Operators and Basic I/O

1. Programming Assignment aSsessment System [PASS]

In this course, you will use the PASS system for program testing and assignment submission.

You may access PASS via the link in Blackboard, or directly via https://pass3.cs.cityu.edu.hk *(You'll be using your CityU EID)*

Select our course – **CS2310 (1718 Sem.B)**

Click the link "Problem list". 

Click the "Test/Submit" icon for the question you want to solve. 

You may specify source code (.cpp file) and upload it with the "Choose File" button *(default)*, or you may paste the source code into the space provided. *(Need to select "your code").*

To test the program *(tutorial or assignment)*, click the ***Test*** button. 

> *Note: Your program should follow the input and output format EXACTLY (i.e. identical spacing and letter case). Otherwise the PASS system will say that your program's output is wrong.*

To submit for an ***assignment***, click the ***Submit*** button. *(Only available for assignments, it does not exist for lab questions).* Please be reminded that only the submissions via the ***Submit*** button are counted for grading. We do not consider the code in ***Test*** for grading.

> *Note: After submission, PASS will report the output of your program versus the "expected output". Note that for assignments, the test cases for "Test" may not be the same as what we use for grading. (Test cases for "Test", which you can see when you click the Test button, are usually a subset of the complete test cases we use for grading.)*

2. Exercises on Operators and Basic I/O

NOTE: In all the following exercises, the input entered by the user is highlighted by underline. It is not part of the output from the program.

Q-1. a) Download the program (`Lab03_Q1.cpp`). This program computes and outputs the area of a triangle with three sides input by the user. Compile and correct the syntax/logical errors.

Is the program easy to understand? Why/why not?

b) Enhance the program so that the input and output of the program are as follows. *(Note: The underlined words are user input. You don't need to print it)*

```
Enter the first side: 7
Enter the second side: 8
Enter the third side: 9
The area is: 26.83
```

Hint-1: You can use the following formula to compute the area of a triangle.

$$p = \frac{a + b + c}{2}$$

$$S = (p * (p - a) * (p - b) * (p - c))^{1/2}$$

Hint-2: You can use *sqrt()* to compute square root, e.g. *y=sqrt(x)* returns the square root of x. This function is declared in header <cmath>.

Hint-3: You need to control the float/double printing precisions using *setprecision()*, which is declared in header <iomanip>.

*You should test your program using PASS.

c) Improve the programming style of the program. This includes using:
(i) More meaningful variable name to reflect the purpose of the variable;
(ii) Indentation (use the tab character to indent and shift-tab to move back by 1 level);
(iii) Comments.