

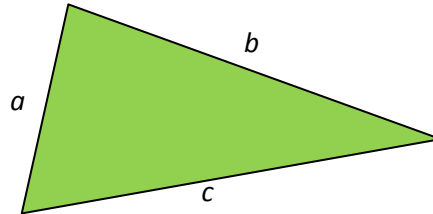
CS1020 Lab #0

Exercise #1: Area of Triangle

http://www.comp.nus.edu.sg/~cs1020/3_ca/labs.html

Objectives:

1. Input/output
2. Using Math class
3. Writing user-defined methods



Task statement:

Write a program **AreaOfTriangle.java** to read 3 positive real numbers a , b , and c which are the lengths of a triangle, and compute the area of the triangle using the Heron's formula:

$$area = \sqrt{p(p-a)(p-b)(p-c)}$$

where p is half the perimeter, i.e. $p = (a + b + c) / 2$.

You are to use **double** type for the values. The output is the area displayed in 2 decimal places.

You may assume that the input data are positive values.

For modularity, you are to define a class method **area(double, double, double)** that takes in the lengths and returns the computed area, and a class method **validTriangle(double, double, double)** that returns **true** if the 3 parameters can possibly represent the lengths of 3 sides of a triangle, or **false** if it is impossible (see the third sample run below), in which case the program should display "Invalid triangle!" in the output.

Sample runs:

```
Enter 3 lengths: 12.5 7.8 19.2
Area = 30.68
```

```
Enter 3 lengths: 876.23 255.71 709.76
Area = 75953.81
```

```
Enter 3 lengths: 10 50 30
Invalid triangle!
```