

CSci 111 - Computer Science I

Fall 2022

Closed Lab 9

Programming Activity

Create a class named **MyTriangle** that contains the following two methods and the main method that reads in three sides for a triangle and computes the area if the input is valid. (Check sample output on next page).

// the **isValid** method, this method returns true if the sum of any two sides is greater than the third side

Use the following method header:

public static boolean isValid (double side1, double side2, double side3)

// the **area** method, this method returns the area of the triangle given three sides

Use the following method header:

public static double area (double side1, double side2, double side3)

You will need to use the following formula to calculate the area of a triangle given the lengths of its sides:

$$\text{area} = \sqrt{s(s-x)(s-y)(s-z)}$$

where x, y and z denote the sides of the triangle, and s is calculated as

$$s = (\frac{1}{2})(x + y + z)$$

You can name your program **MyTriangle.java**

(This program contains a **main method** and two **user-defined methods**, check the method headers above)

When done, raise your hand to let the TA know that you are ready to demonstrate your code for grading.

```
// import statement(s), class header, and main method header

// in the main method, declare variables for the inputs and output, prompt
// for inputs. Call the isValid method to check the validity of the three
// sides. If the input sides are valid, then call the area method to
// calculate the area of the triangle and display output (2 decimal places).
// otherwise, display that the input is invalid.

// user-defined isValid method

// user-defined area method
```

Sample Output

```
Enter first side of the triangle: 4
Enter second side of the triangle: 5
Enter third side of the triangle: 6

For a triangle of sides 4.00, 5.00, and 6.00
Area = 9.92 square units
>>

Enter first side of the triangle: 1
Enter second side of the triangle: 2
Enter third side of the triangle: 3

Invalid triangle!
>>
```