

## Area of Triangle

### Problem Description:

Write a program that will ask the user to enter three sides of a triangle, and will print the area and perimeter of that triangle. The program must declare and use a void function called `calc_triangle()` that has 5 parameters, three value parameters for the three sides and two reference parameters that return the area and the perimeter. The function will compute both the area and the perimeter of the triangle and return the values through the reference parameters. Note that not all sets of three values will form a triangle. Your function should identify these values and return a 0 for both area and perimeter when this is the case. The function should not print anything; values should be passed back to the calling function to be printed. Print your answers to 2 decimal places.

The area of a triangle can be computed using the formula:

$$\text{area} = \sqrt{s * (s-a) * (s-b) * (s-c)}$$

Where  $s$  is the semiperimeter and  $a, b, c$  are the sides of the triangle.

The semiperimeter can be calculated using the following formula:

$$s = (a+b+c)/2$$

Include a loop that lets the user repeat this computation for new input values until the user says he or she wants to end the program.

### Example Output:

```
Enter side 1: 3
Enter side 2: 4
Enter side 3: 5
That triangle has an area of 6.00 and a perimeter of 12.00.
Would you like to run the program again (Y or N)? Y

Enter side 1: 2.1
Enter side 2: 3.72
Enter side 3: 13.9
The three sides entered do not form a triangle.
Would you like to run the program again (Y or N)? n
```

### Required Test Cases:

```
7, 24, 25
14.54, 17.3, 47.1
7.38, 13.4, 9.8
```

### Skills:

•Var •Con I/O •Format •Logic •Loops •Functions •Call by Ref •File I/O •Arrays •Strings •GM