Assignment 7

Due 28 October 7:59am

1 Problem 1

Area of a Triangle The area of an arbitrary triangle can be computed using the formula

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

where a, b, and c are the lengths of the sides, and s is the *semiperimeter*.

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

Your code must include functions which do the following:

1. Ask the user to input three side lengths. This will be a **void** function which uses reference variables to store the three side lengths.
2. A **void** function that computes the area and perimeter of a triangle based on the lengths of the sides. The function should use five parameters: three value parameters that provide the lengths of the edges and two reference parameters that store the computed area and perimeter.
3. A function to ask the user if they'd like to continue and perform another calculation.

2 Bonus: 10pts

Assume Nothing Triangular Not all combinations of a, b, and c produce a triangle. Add a function which is called before the area and perimeter is computed which checks to make sure if the sides correspond to a legal triangle. Have this function return a **bool**, *true* if a legal triangle and *false* if not. If this function returns *false* have the calling function print an error message for the user and set the area and perimeter reference variables to -1.

The following link has more information on this: `http://www.mathopenref.com/triangleinequality.html`