

Right Triangle Calculator 2.0

Create a program that calculates the hypotenuses, perimeter and area of a right triangle.

Note: **Bold** words are output while non-bold words are input in the following console sample.

Console Sample

```
Right Triangle Calculator 2.0

Enter the Leg 1: 4.3
Enter the Leg 2: 6.2

Hypotenuse: 7.5452
Perimeter: 18.0452
Area: 13.33
```

Specifications

- You have to define a class *RightTriangle* with two private data members corresponding to the lengths of the two legs adjacent to the right angle respectively.
- Declare and define a non-default constructor which requires two parameters corresponding to the two private data members respectively for the class *RightTriangle*.
- Declare and define all the necessary getters and setters for private members in the class *RightTriangle*.
- Declare and define a public member function in the class *RightTriangle* to calculate the length of the hypotenuse and return it as the result. Given the lengths of leg 1 and leg 2 in a right triangle, the formula to calculate the hypotenuse is:
$$\text{hypotenuse} = \sqrt{\text{leg1}^2 + \text{leg2}^2}$$
- Declare and define a public member function in the class *RightTriangle* to calculate the perimeter and return it as the result. The formula to calculate the perimeter of a right triangle is:
$$\text{perimeter} = \text{leg1} + \text{leg2} + \text{hypotenuse}$$
- Declare and define a public member function in the class *RightTriangle* to calculate the area and return it as the result. The formula to calculate the area of a right triangle is:
$$\text{area} = \text{leg1} * \text{leg2} / 2.0$$
- Declare and define a public member function *display_results()* in the class *RightTriangle* to display all the results in the console as shown in the sample above.
- In the *main()*, you must first create a *RightTriangle* object based on user's input and then call the member function *display_results()* on the object. This's all you are allowed to do in the *main()*.
- The program should accept decimal entries like 35.5 and 14.25.
- Assume the user will enter valid data.
- In order to use the math function *sqrt()*, you must also include header file `<cmath>`.