

**Aim:**

Write a program to find the **area** of a **triangle** using Heron's formula.

During execution, the program should print the following message on the console:

sides:

For example, if the user gives the following as **input** (input is positive floating decimal point numbers):

sides: 2.3 2.4 2.5

Then the program should **print** the result round off upto 2 decimal places as:

area: 2.49

**Instruction:** Your input and output layout must match with the sample test cases (**values as well as text strings**).

The area of a triangle is given by  $\text{Area} = \sqrt{p(p-a)(p-b)(p-c)}$ , where  $p$  is half of the perimeter, or  $(a+b+c)/2$ . Let a,b,c be the lengths of the sides of the given triangle.

**Hint:** Use `sqrt` function defined in `math.h` header file

**Source Code:**

Program313.c

```
#include <stdio.h>
#include <math.h>
int main()
{
    float a,b,c;
    float p,area;
    printf("sides: ");
    scanf("%f%f%f",&a,&b,&c);
    p=(a+b+c)/2;
    area=sqrt((p)*(p-a)*(p-b)*(p-c));
    printf("area: %0.2f",area);
}
```

**Execution Results** - All test cases have succeeded!

| Test Case - 1      |
|--------------------|
| User Output        |
| sides: 2.3 2.4 2.5 |
| area: 2.49         |

| Test Case - 2      |
|--------------------|
| User Output        |
| sides: 2.6 2.7 2.8 |

area: 3.15