Python → Object-oriented programming → <u>Class instances</u>

<u>Class instances</u> → Right triangle

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A right triangle is a triangle in which one angle is a right angle (90-degree angle). The side opposite to the right angle is called a *hypotenuse* and the other two sides are called *legs* (or *catheti*).

The *Pythagorean theorem* holds for right triangles with integer lengths of all sides:

 $c^2=a^2+b^2$, where c is the length of the hypotenuse, and a and b are the lengths of the legs.

Here's a class RightTriangle with the class constructor. The constructor is missing the area attribute. Calculate the area S according to this formula:

```
S = \frac{1}{2}ab.
```

Three numbers (input_c, input_a, and input_b) have already been read from the input. They represent a triangle: the first number is the length of the supposed hypotenuse, the other two are the legs. If the triangle with these sides is right, create an instance of the class RightTriangle and print its area (with one decimal). If the triangle is not right, print "Not right".

Report a typo

Sample Input 1:

5 3 4

Sample Output 1:

6.0

Sample Input 2:

4 3 2

Sample Output 2:

Not right

Sample Input 3:

13 12 5

Sample Output 3:

30.0

√ Write a program

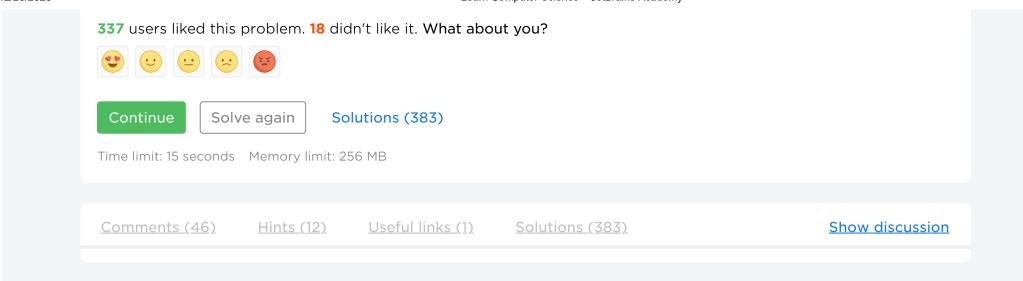
Code Editor IDE

```
1 class RightTriangle:
        def __init__(self, hyp, leg_1, leg_2):
            self.c = hyp
 4
            self.a = leg_1
            self.b = leg_2
            # calculate the area here
        def areas(self):
            hypotenuse = self.c ** 2
            square_ab = self.a ** 2 + self.b ** 2
10
11
            if hypotenuse == square_ab:
12
                return 1 / 2 * self.a * self.b
            return "Not right"
13
14
15
16 # triangle from the input
17 input_c, input_a, input_b = [int(x) for x in input().split()]
18 triangle = RightTriangle(input_c, input_a, input_b)
19 # write your code here
20 print(triangle.areas())
21
```

✓ Correct.

That's an awesome solution! What do you think about showing it off? <u>Post it to Solutions</u> so other learners can enjoy it too.

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