Class instances → Right triangle

Medium 9 minutes

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

Python

```
class RightTriangle:
    def __init__(self, hyp, leg_1, leg_2):
        self.c = hyp
        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
        if hypotenuse == square_ab:
            return 1 / 2 * self.a * self.b
        return "Not right"


# triangle from the input
input_c, input_a, input_b = [int(x) for x in input().split()]
triangle = RightTriangle(input_c, input_a, input_b)
# write your code here
print(triangle.areas())

```

✓ Correct.

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