

# Pythagorean triples (medium)

Pythagoras is credited, by tradition, for the first proof of the relation  $a^2 + b^2 = c^2$  in any right angled triangle where  $c$  is hypotenuse and  $a$  and  $b$  are the [catheti](#).

We define a Pythagorean triple as a set of three positive integers  $a$ ,  $b$ , and  $c$  which satisfy the above equation, ie,  $a^2 + b^2 = c^2$ .

{3,4,5} is the most common example of such triples.

## Input

The first line of input contains an integer  $T$ , the number of test cases.

Each of the next  $T$  lines contains two integers  $N$ ,  $M$ .

## Output

For each test case, print on a single line the number of Pythagorean triplet  $\{a,b,c\}$  such that  $N \leq a,b,c \leq M$ .

## Example

**Input:**

```
3
1 5
4 10
10 100
```

**Output:**

```
1
1
45
```

## Constraints

```
0 < T < 100
0 < N < M
0 < T × M < 1.21×10^8
```

There are several input files.

Time limit is  $\times 10$  my top speed with C language (1kB of code).

For your information, my total best time is 1.09s for the 6 input files ; 1.7MB of total memory print.

Warning, it could be hard with interpreted languages.

You can try before the quite similar tutorial problem : [PYTRIP](#) before.

## Information

This problem is part of the [Bubble Cup competition](#) qualification round (April 2014).

@students: good luck. GNU\_salutations.