Sherlock and Squares ★



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Watson likes to challenge Sherlock's math ability. He will provide a starting and ending value that describe a range of integers, inclusive of the endpoints. Sherlock must determine the number of square integers within that range.

Note: A square integer is an integer which is the square of an integer, e.g. 1, 4, 9, 16, 25.

Example

a = 24

b = 49

There are three square integers in the range: 25, 36 and 49. Return 3.

Function Description

Complete the squares function in the editor below. It should return an integer representing the number of square integers in the inclusive range from **a** to **b**. squares has the following parameter(s):

- int a: the lower range boundary
- int b: the upper range boundary

Returns

• int: the number of square integers in the range

Input Format

The first line contains ${\it q}$, the number of test cases.

Each of the next q lines contains two space-separated integers, a and b, the starting and ending integers in the ranges.

Constraints

 $1 \le q \le 100$

 $1 \le a \le b \le 10^9$

Sample Input

2

3 9

17 24

Sample Output

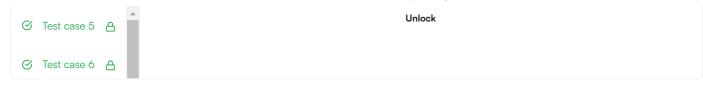
2

Explanation

Test Case #00: In range [3,9], 4 and 9 are the two square integers.

Test Case #01: In range [17,24], there are no square integers.

```
Change Theme Language C++14
         #include <bits/stdc++.h>
     2
     3
         using namespace std;
         string ltrim(const string &);
         string rtrim(const string &);
     6
         vector<string> split(const string &);
     8
     9
         /*
    10
         * Complete the 'squares' function below.
    11
    12
          * The function is expected to return an INTEGER.
          \star The function accepts following parameters:
    13
    14
            1. INTEGER a
    15
             2. INTEGER b
    16
    17
         int squares(int a, int b) {
    18
    19
             int lower_bound = ceil(sqrt(double(a)));
    20
    21
             int upper_bound = floor(sqrt(double(b)));
    22
             return upper_bound - lower_bound + 1 ;
    23
    24
         }
    25
    26
        int main()
    27
             ofstream fout(getenv("OUTPUT_PATH"));
    28
    29
    30
             string q_temp;
             getline(cin. a temn):
    31
                                                                                                    Line: 21 Col: 46
                                                                                              Run Code
                                                                                                          Submit Code
^{\uparrow} Upload Code as File
                    Test against custom input
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62%
                                               706/850
 Congratulations
                                                                                                     Next Challenge
 You solved this challenge. Would you like to challenge your friends?
Compiler Message
                         Success
△Hidden Test Case
Unlock this testcase for 5 hackos.
```



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