

Sherlock and Squares

Problem Statement

Watson gives two integers (A and B) to Sherlock and asks if he can count the number of square integers between A and B (both inclusive).

Note: A square integer is an integer which is the square of any integer. For example, 1 , 4 , 9 , and 16 are some of the square integers as they are squares of 1 , 2 , 3 , and 4 , respectively.

Input Format

The first line contains T , the number of test cases. T test cases follow, each in a new line. Each test case contains two space-separated integers denoting A and B .

Output Format

For each test case, print the required answer in a new line.

Constraints

$$1 \leq T \leq 100$$

$$1 \leq A \leq B \leq 10^9$$

Sample Input

```
2
3 9
17 24
```

Sample output

```
2
0
```

Explanation

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

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