

Sherlock and Squares

Problem Statement

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

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

Input Format

First line contains T , the number of testcases. T test cases follow, each in a newline. Each testcase contains two space separated integers denoting A and B .

Output Format

For each testcase, 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.