Sherlock and Squares

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.

Constraints

$1 \leq T \leq 100$
$1 \leq A \leq B \leq 10^9$

Output Format

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

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.