

# 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  $B$ .

## 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.