Square Fun

Given two numbers A and B, count the number of perfect squares which lies between A and B (both inclusive).

Input Format

First line of input contains T - number of test cases. Its followed by T lines, each line contains two numbers A and B.

Constraints

30 points
$1 <= T <= 10^3$
$1 <= A <= B <= 10^9$

70 points
$1 <= T <= 10^5$
$1 <= A <= B <= 10^{18}$

Output Format

For each test case, print the count of perfect squares which lies between A and B (both inclusive), separated by new line.

Sample Input 0

```
2
3 9
17 24
```

Sample Output 0

```
2
0
```

Explanation 0

Test Case 1
There are 2 perfect squares in the range [3, 9] - 2^2, 3^2

Test Case 2
There are no perfect squares in the range [17, 24]