

Square Free Numbers

Filename: sqfree

Danny is afraid of perfect squares, because he once had bad luck on the 1st, 4th, 9th, 16th and 25th of a month. So, whenever he chooses a number for any purpose, he tries to choose numbers that are NOT perfect squares. Help Danny figure out how many numbers he can choose in a particular range.

The Problem

Given a low bound and a high bound, determine the number of integers within those bounds, inclusive, that are NOT perfect squares.

The Input

The first line of the input file will contain a number n ($1 \leq n \leq 10000$) indicating the number of ranges to be evaluated. The following n lines will each contain two integers, a ($1 \leq a \leq 1000000$) and b ($a \leq b \leq 1000000$).

The Output

For range $[a, b]$, output on a single line the number of integers in the range that are not perfect squares.

Sample Input

```
3
20 40
1 3
9999 10000
```

Sample Output

```
19
2
1
```