

# Square Free Numbers

*Filename: sqfree*

Danny is afraid of perfect squares, because he once had bad luck on the 1<sup>st</sup>, 4<sup>th</sup>, 9<sup>th</sup>, 16<sup>th</sup> and 25<sup>th</sup> 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  $n$  ( $1 \leq n \leq 100$ ) indicating the number of ranges to be evaluated. The following  $n$  lines will each contain two integers,  $a$  ( $1 \leq a \leq 10000$ ) and  $b$  ( $a \leq b \leq 10000$ ).

## 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
```