Guessing Primes

After they finished, the race SINF and NI sat down to catch their breadth. While they recovered they decided to take turns guessing a number that the other one was thinking. However, the guesser gets an hint, consisting of a numeric interval, where the solution is the number of prime numbers in the given interval.

Input Format

- The first line contains the number of rounds (R)

- The following R lines contain Li and Ui separated by a whitespace

Constraints

$1 <= R <= 1000$

$1 <= Li <= Ui <= 1000000$

Output Format

- R lines, each with the number of prime numbers between Li and Ui (including Li and Ui)

Sample Input 0

```
2
1 1
2 2
```

Sample Output 0

```
0
1
```

Sample Input 1

```
2
19 24
14 19
```

Sample Output 1

```
2
2
```