Prime Differences

Find the greatest difference between two prime numbers in their range given two integers a and b. For example, if you are given two integers, $a = 12$ and $b = 20$, the two furthest prime numbers are 13 and 19, then the solution is 6. If the range contains no prime numbers, print 0.

Input Format

The first line includes the number of testcases T. Then T lines follow, each with the integers a and b separated by spaces

Constraints

$1 \le n \le 10^6$
$1 \le a \le b \le 10^6$

Output Format

Print the largest difference between two prime integers in the range $[a, b]$ on a distinct line for each testcase.

Sample Input 0

```
10
41 18508
6334 32834
19169 34893
11478 40836
26962 51426
5705 33850
23281 40108
9961 10452
2995 14937
4827 10263
```

Sample Output 0

```
18462
26496
15702
29346
24440
28118
16808
466
11930
5428
```