

Prime Intervals

In this problem you have to print all primes from given interval.

Input

t - the number of test cases, then t lines follows. [$t \leq 150$]

On each line are written two integers L and U separated by a blank. L - lower bound of interval, U - upper bound of interval. [$2 \leq L < U \leq 2147483647$] [$U-L \leq 1000000$].

Output

For each test case output must contain all primes from interval $[L; U]$ in increasing order.

Example

Input:

```
2
2 10
3 7
```

Output:

```
2
3
5
7
3
5
7
```