

# GCD On Sequence

Input file:            **standard input**  
Output file:           **standard output**  
Time limit:            **3 seconds**  
Memory limit:         **256 megabytes**

You have a sequence  $a$  of length  $n$ , you need to answer  $q$  queries:

Given two integers  $l$  and  $r$ , what is the max value of  $\gcd(a_i, a_j), l \leq i < j \leq r$ .

$\gcd(x, y)$  denotes the greatest common divisor (GCD) of integers  $x$  and  $y$ .

## Input

This problem contains multiple test cases.

The first line contains an integer  $T$  indicating the number of test cases.

For each test case, the first line contains one integer  $n, q$  ( $2 \leq n \leq 10^5, 1 \leq q \leq 10^5$ ).

The second line contains  $n$  integers  $a_i$  ( $1 \leq a_i \leq n$ ).

The next  $q$  lines each contains two integers  $l$  and  $r$  ( $1 \leq l < r \leq n$ ), indicating a query.

It's guaranteed that  $\sum n \leq 10^6, \sum q \leq 10^6$ .

## Output

For each query, output a line contains an integer indicating the answer.

## Example

standard input	standard output
1	1
5 3	2
1 4 3 5 2	2
1 3	
2 5	
1 5	