Problem I. Coprime Queries

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

You are given a sequence $a_1, a_2, \ldots, a_n$ consisting of positive integers. You have to answer q queries. A query is defined by a triplet of numbers (l, r, x). For each query, you have to find the largest p such that $l \le p \le r$ and a_p is coprime with x, or determine that there is no such p.

Input

The first line of the input contains two integers n and q ($1 \le n, q \le 100\,000$).

The second line contains n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 100\,000$).

The next m lines contain queries. The i-th of these lines contains three integers l_i, r_i and x_i ($1 \le l_i \le r_i \le n$, $1 \le x \le 100\,000$).

Output

For each query, output the answer to it on a separate line.

Example

standard input	standard output
5 4 1 2 3 4 6 1 5 2 1 1 1 4 5 2 3 5 3	3 1 -1 4