Problem L. Barkley

Input file:	standard input
Output file:	standard output
Time limit:	1 second
Memory limit:	1024 megabytes

There are n little pigs in Pigetown. All of them are proficient in competitive programming and the i-th of them has a_i rating. If some of the competitors form a team, the rating of the team will be the greatest common divisor of the rating of the competitors in the team.

Exactly q competitions are going to take place. Pigetown can send exactly one team to participate each contest. For the i-th competition, only the pigs numbered between l_i and r_i have time to participate. Unfortunately, due to a shortage of funds, exactly k_i pigs numbered between l_i and r_i have to work for Putata and Budada to earn funds. Meanwhile, all other pigs in the interval will participate in the contest.

As the coach of Pigetown, for each contest you have to properly select pigs which will participate so that the rating of the team is maximized.

Input

The first line contains two integers n, q ($1 \le n \le 10^5, 1 \le q \le 66666$).

The following line contains n integers, the i-th of them is a_i ($1 \le a_i \le 10^{18}$), denoting the rating of the i-th pig.

The i-th of the following q lines contains three integers l_i, r_i, k_i ($1 \le l_i \le r_i \le n, 1 \le k_i \le \min(3, r_i - l_i)$), denoting one competition.

It is guaranteed that there are no more than 66000 competitions with $k_i = 1$, no more than 660 competitions with $k_i = 2$, and no more than 6 competitions with $k_i = 3$.

Output

Output q lines, the i-th line contains the maximum rating of the teams which participates the i-th contest.

Example

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