

# GCD query

## Problem ID: gcdquery

You are given an array  $a$  of  $n$  positive integers  $a_1, a_2, \dots, a_n$ . There are  $q$  queries in the form  $\ell r d$ . For each query, you need to find the number of sub-arrays within the range from  $\ell$  to  $r$  whose greatest common divisor are less than or equal to  $d$ . More formally, you are about to count how many pairs of indices  $(u, v)$  such that:

- $\ell \leq u \leq v \leq r$ ;
- $\gcd(a_u, a_{u+1}, \dots, a_{v-1}, a_v) \leq d$

### Input

The first line of input contains 2 integers  $n$  and  $q$  ( $1 \leq n \leq 2 \times 10^5, 1 \leq q \leq 2 \times 10^5$ ).

The second line contains  $n$  positive integers  $a_1, a_2, \dots, a_n$  ( $1 \leq a_i \leq 10^9$ ) describing the given array.

On the next  $q$  lines, each contains 3 integers  $\ell r d$  ( $1 \leq \ell \leq r \leq n, 1 \leq d \leq 10^9$ ) describing a query.

### Output

For each query, you need to print the answer in one line.

#### Sample Input 1

```
6 5
3 9 6 2 8 4
1 5 3
2 4 3
1 5 4
2 6 2
1 6 1
```

#### Sample Output 1

```
12
4
12
9
6
```