Problem A. Kolkhozy

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1.5 seconds
Memory limit:	1024 megabytes

Russia was part of the USSR (Union of Soviet Socialist Republics), which had a socialist regime. Under this regime there were collective farms, such as the kolkhozy (plural of kolkhoz).

Russia used to have n kolkhozy numbered from 1 to n. Each kolkhoz produced k_i bags of grains. This production was split evenly with the m families which were provisioned by that given kolkhoz. According to the strict rules of the Communist Party, when splitting the k_i bags of grains among the m families, each family should get precisely

$$\left\lfloor \frac{k_i}{m} \right\rfloor$$

bags. Note that there may be leftover bags. By law, the leftovers belong to the government. But the strict rules go further. To avoid corruption by the bureaucrats, the government decided that the leftovers from a collective farm go to the x employees in charge of the distribution only if each employee gets exactly one bag.

Unfortunately, when a law is created, hundreds of people try to break it. Thus, the employees decided to split the kolkhozy into regions (arguing that it would simplify distribution) so that they can get the leftover bags.

The bureaucrats considered q possible regions, which are described as intervals from l to r collective farms (endpoints included), and they wish to answer how many kolkhozy in this interval have precisely x leftover bags if this interval were to supply m families.

Input

The first line has two integers n and q - the number of kolkhozy and the number of queries.

The second line has n nonnegative integers, $k_1, \ldots, k_n$ — the number of bags of grains produced by each of the n collective farms.

Each one of the next q lines has four integers, l, r, x, and m — the parameters of a query made by the bureaucrats.

Constraints

- $1 \leq n, q \leq 5 \cdot 10^4$
- $0 \leq k_i \leq 5 \cdot 10^4$ for each i
- $1 \leq l \leq r \leq n$
- $1 \leq m \leq 5 \cdot 10^4 + 1$
- $0 \leq x < m$

Output

For each query print a single integer in a single line — how many collective farms in the interval l to r generate exactly x leftover bags of grains when supplying m families.

Example

standard input	standard output
3 4 1 2 3 1 3 1 2 2 3 1 2 1 3 0 2 1 3 0 1	2 1 1 3