AND queries

Max. Marks: 100

You are given an integer array A of length N and M queries. For each query, you are given three integers L, R, X and you should find the number of triplets (i, j, k) such that $(L \leq i, j, k \leq R)$ and $(A_i \ \& \ A_j \ \& \ A_k = X)$.

Symbol $\&$ denotes bitwise operator AND.

Input format:

First line contains one integer N $(1 \leq N \leq 100000)$.

Next line contains N space-separated integers denoting the array A $(0 \leq A_i \leq 255)$.

The next line contains one integer M $(1 \leq M \leq 50000)$.

Next M lines contains three space-separated integers L, R, X $(1 \leq L \leq R \leq N,\ 0 \leq X \leq 255)$

Output format:

For each query, print the required answer modulo $10^9 + 7$ in a new line.

SAMPLE INPUT	SAMPLE OUTPUT
5 3 2 1 2 2 10 5 5 3 2 2 2 2 5 3 4 4 1 2 4 0 1 3 0 1 3 0 2 3 0 1 4 0 5 5 2	0 1 0 0 18 12 12 6 30 1

Explanation

For 8-th query, there are 6 triplets: $(2, 2, 3)$, $(2, 3, 2)$, $(2, 3, 3)$, $(3, 2, 2)$, $(3, 2, 3)$, $(3, 3, 2)$.

Time Limit:	1.5 sec(s) for each input file.
Memory Limit:	256 MB
Source Limit:	1024 KB
Marking Scheme:	Marks are awarded if any testcase passes.
Allowed Languages:	Bash, C, C++, C++14, Clojure, C#, D, Erlang, F#, Go, Groovy, Haskell, Java, Java 8, JavaScript(Rhino), JavaScript(Node.js), Julia, Kotlin, Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, Racket, Ruby, Rust, Scala, Swift, Swift-4.1, Visual Basic

CODE EDITOR

Enter your code or Upload your code as file. Save Bash (GNU bash, version 4.3

```
1 # Sample bash code
2
```

Press Ctrl/Command+Spacebar for autocomplete suggestions (accuracy dependent on connection stability).

Provide custom input

COMPILE & TEST SUBMIT

Tip: You can submit any number of times you want. Your best submission is considered for computing total score.

Your Rating:

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