

Hand Cricket

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

Alice and Bob play a game on an integer array A of length N . Alice chooses a secret index i , and Bob chooses a secret index j . If $i \neq j$ then Alice gains A_i points, else she gains 0 points. Then the game ends.

Alice wants to maximize the point. Bob wants to minimize it. Both of them will choose their own strategy in such a way that their strategy cannot be exploited, even if it is leaked to the other person.

Answer Q queries, each with a given tuple $[L, R, K]$. For each query,

- The game will be played within the subarray A_L, A_{L+1}, \dots, A_R .
- A strategy for a player is a probability distribution $P_L, P_{L+1}, \dots, P_R (P_L + P_{L+1} + \dots + P_R = 1, 0 \leq P_i \leq 1)$ which implies that the player will choose index i with probability P_i .
- Before the game starts, Alice can apply at most K increment moves. An increment move is to do $A_i = A_i + 1$ for some $i \in [L, R]$. The move can be applied multiple times on the same i . The increment moves only affect the current query and will not persist to subsequent queries.

Print the expected number of points gained by Alice for each query. The answer can be expressed as an irreducible fraction $\frac{X}{Y}, Y \neq 0$. You need to print the value of $(X \cdot Y^{-1})$ modulo 998244353. It is guaranteed that for each of the queries an answer can be calculated (i.e Y^{-1} exists modulo 998244353).

Input

The first line contains an integer $N (1 \leq N \leq 2 \cdot 10^5)$. The second line has N space-separated integers $A_1, A_2, \dots, A_N (1 \leq A_i \leq 10^8)$. The third line contains an integer $Q (1 \leq Q \leq 10^5)$, the number of queries. The following Q lines contain 3 integers each, $L_i, R_i, K_i (1 \leq L_i \leq R_i \leq N, 0 \leq K_i \leq 10^8)$ representing the i^{th} query.

Output

Print the answer of each query in a separate line.

Example

standard input	standard output
3	2
1 2 3	0
3	598946613
1 3 3	
1 1 6	
1 2 2	