Problem Ex. それはとっても嬉しいなって

Time limit 6000 ms
Memory limit 4MB

Problem Description

Note that the time limit and memory limit is unusual.

You are given an array V of N integers. For every possible subarray, consider the maximum value in the subarray. Find the sum of these values.

Input format

Each test contains multiple test cases. The first line contains the number of test cases $T(1 \leq T \leq 10^5)$. The description of the test cases follows.

Instead of reading the array itself, each line will contain 5 integers N, S, A, B, C.

The array V is defined as follows:

- $V_1 = S$
- $V_{i+1} = (A * V_i + B) \bmod C$, for any $1 \leq i < N$
- $1 \leq \sum N \leq 3 * 10^6$
- $1 \leq S < C$
- $1 \leq A < C$
- $0 \leq B < C$
- $2 \leq C \leq 10^9$

Output format

For each test case, output a single interger in one line: the answer modulo 998244353.

Subtask score

Subtask	Score	Additional Constraints
1	1	$\sum N \leq 5 * 10^2, C$ is prime
2	17	$\sum N \leq 5 * 10^3, C$ is prime
3	18	$N \leq 5 * 10^4, \sum N \leq 3 * 10^5, C$ is prime
4	19	$C \leq 10^2, C$ is prime
5	4	$\sum N \leq 3 * 10^5$
6	30	C is prime
7	11	No constraints

Sample

Sample Input 1

```
2
3 2 3 18 67
5 6 7 10 97
```

Sample Output 1

```
121
1012
```