Problem C. Count Hamiltonian Cycles

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

You are given a string s of length $2n$, containing n characters `W` and n characters `B`.

Let's build a graph on $2n$ nodes. If $s_i \neq s_j$ for some $1 \leq i < j \leq 2n$, then there is an edge of weight $|i - j|$ between nodes i and j in this graph. There are no other edges.

Find the number of shortest Hamiltonian cycles in this graph. As this number can be very large, output it modulo 998244353.

As a reminder, a Hamiltonian cycle is a cycle that visits each node exactly once. The length of the cycle is equal to the sum of the weights of its edges. Two cycles are called different if there is an edge that one contains and the other doesn't.

Input

The first line contains a single integer t ($1 \leq t \leq 10^4$) — the number of test cases. The description of test cases follows.

The first line of each test case contains a single integer n ($2 \leq n \leq 10^6$).

The second line of each test case contains a string s of length $2n$, containing n characters `W` and n characters `B`.

It is guaranteed that the sum of n over all test cases does not exceed 10^6.

Output

For each test case, output the number of shortest Hamiltonian cycles in this graph, modulo 998244353.

Example

standard input	standard output
3 2 WWBB 3 WBWBWB 7 WWWWBWBBWWBBBB	1 2 62208

Note

In the first test case, the graph has 4 edges: $(1, 3)$ with weight 2, $(1, 4)$ with weight 3, $(2, 3)$ with weight 1, and $(2, 4)$ with weight 2.

There is a unique Hamiltonian cycle here: $1 \to 3 \to 2 \to 4 \to 1$ (Note that, for example, cycle $1 \to 4 \to 2 \to 3 \to 1$ contains the same set of edges, so we have already counted it).