Grammy's Kingdom

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	512 megabytes

Grammy's kingdom is in danger. Some foreign invaders have intruded into her kingdom and they are destroying the traffic system. There are n stations indexed from 1 to n in the traffic system. Moreover, there are m ($m \le n$) airports located in some of the stations. If you are in station i, you can transfer to station $i+1$ if i and $i+1$ haven't been destroyed. If you are in station i **with an airport**, you can fly to station j **if** $i \le j$ **and station** j **has an airport** and both of the stations haven't been destroyed. We define the stability G of the system as the number of routes that still available.

Formally, $G = \sum_{1 \le i \le j \le n}$[a person in station i can transfer to station j via several stations or airports].

At each moment i ($1 \le i \le n$), the invaders will randomly choose an undestroyed station x and destroy it as well as the airport in it (If there exists an airport in it).

We define $E(x)$ as the expected value of x. Grammy wonders the value of $\sum_{i=1}^{n} E(G_i)$ modulo 998 244 353. Could you please help her? Here, G_i denotes the value of the stability G after the invaders destroying the i-th chosen station at the i-th moment.

Input

The input contains only a single case.

The first line contains two positive integers n and m ($1 \le n \le 2\,000\,000$, $0 \le m \le n$), denoting the number of stations and the number of airports.

The second line contains m distinct integers $x_1, x_2, \ldots, x_m$ ($1 \le x_i \le n$), denoting the indexes of station that has an airport.

Output

Output one integer, the value of $\sum_{i=1}^{n} E(G_i)$ modulo 998 244 353.

Examples

standard input	standard output
1 0	0
3 3 1 2 3	4
6 2 2 4	16637434

Note

It can be proved that the answer can be represented as a rational number $\frac{p}{q}$ with $\gcd(p, q) = 1$. Therefore, you are asked to find the value of $pq^{-1} \bmod 998\,244\,353$. It can be shown that $q \bmod 998\,244\,353 \ne 0$ under the given constraints of the problem.