

## Problem L. Let's Measure Permutations

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

Consider a permutation  $p$  of integers  $1, 2, \dots, n$ . How close is it to the permutation  $(1, 2, \dots, n)$ ?

Lisa measures it as the number of inversions in  $p$ : the number of pairs  $(i, j)$  such that  $i < j$  and  $p_i > p_j$ .

Leo, on the other hand, uses the metric  $\frac{1}{2} \sum_{i=1}^n |p_i - i|$ .

Given a sequence  $a = (a_1, a_2, \dots, a_k)$  of  $k$  distinct integers from 1 to  $n$ , there are  $(n - k)!$  permutations of length  $n$  that have  $a$  as their prefix.

Find the number of these permutations for which Lisa's metric and Leo's metric are equal, and return the result modulo 998 244 353.

### Input

The first line of the input contains two integers  $n$  and  $k$  ( $1 \leq n \leq 2 \cdot 10^5$ ,  $0 \leq k \leq n$ ).

If  $k$  is positive, the second line contains  $k$  pairwise distinct integers  $a_i$ : the prefix of the permutation ( $1 \leq a_i \leq n$ ,  $a_i \neq a_j$  for  $i \neq j$ ).

### Output

Print one integer: the number of such permutations modulo 998 244 353.

### Examples

<i>standard input</i>	<i>standard output</i>
5 3 2 3 5	1
10 10 3 1 4 5 9 2 6 8 7 10	0
6 0	132