# Majority and Permutation

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|---|---|
| Input file: | `standard input` |
| Output file: | `standard output` |
| Time limit: | 2 seconds |
| Memory limit: | 1024 megabytes |

You are given an integer sequence $(A_1, A_2, \ldots, A_M)$ consisting of odd numbers between 1 and $2N-1$ (inclusive).

Find the number of permutations $P = (P_1, P_2, \ldots, P_{2N})$ of $(1, 2, \ldots, 2N)$ that satisfy the following condition, modulo 998244353.

- There exists a binary string $S$ of length $2N$ consisting only of `0` and `1` that meets all of the following conditions:
  - The frequencies of `0` and `1` in S are exactly N each.
  - For each $i = 1, 2, \ldots, M$, in the $1, 2, \ldots, A_i$ -th characters of $S$, the most frequent character is `0`.
  - For each $i = 1, 2, \ldots, M$, in the $P_1, P_2, \ldots, P_{A_i}$ -th characters of $S$, the most frequent character is `0`.

## Input

The input is provided in the following format from standard input:

$N$ $M$
$A_1$ $A_2$ $\ldots$ $A_M$

- All inputs are integers.
- $1 \leq M \leq N \leq 10^5$
- $1 \leq A_1 < A_2 < \cdots < A_M \leq 2N-1$
- $A_i$ is odd.

## Output

Print the answer on a single line.

## Example

| standard input | standard output |
|---|---|
| 2 2<br>1 3 | 14 |

## Note

For example, if $P = (2, 1, 3, 4)$, then $S =$ `0011` satisfies all three conditions.

On the other hand, if $P = (4, 3, 2, 1)$, there is no string of length 4 that satisfies all three conditions.