Coin Change Problem

Type	Input file	Output file	Time limit	Memory limit
Batch	stdin	stdout	1 second	128 MB

Statement

IOI-chan is planning to visit the mysterious Qubitland. However, the cost of her train ticket to Qubitland is in a superposition of all possible train fares from 1 to N dollars. The currency of Qubitland consists of K types of *quarks*, and the i-th quark is worth exactly a_i dollars.

Let $f(x)$ be the minimum number of quarks required to make exactly x dollars. In addition, $f(x) = 0$ if it is not possible to make exactly x dollars. In order to pay her train fare, IOI-chan wants you to find the sum of all $f(i)$ for every integer i from 1 to N.

Input

The first line of input contains two integers: N and K. The next K lines contain a single integer each. The i-th of these lines contains the integer a_i. a_i will be sorted in ascending order.

Output

Output the sum of all $f(i)$ for every integer i from 1 to N, modulo 998244353.

Sample Input

```
5 3
2
5
420
```

Sample Output

```
4
```

Explanation

$f(1) = 0$, $f(2) = 1$, $f(3) = 0$, $f(4) = 2$, $f(5) = 1$. Therefore the answer is $0 + 1 + 0 + 2 + 1 = 4$.

Constraints

- $1 \leq N \leq 10^{18}$
- $1 \leq K \leq 15$
- $1 \leq a_i \leq 1000$ for all i
- a_i are unique for all i.

Subtasks

Number	Points	Additional Constraints
1	1	$N \leq 10^6 + 69$
2	68	$K \leq 2$
3	31	$K \geq 2$ and $a_{K-1} = a_K - 1$.