

# Summing Sequence (8 Points)

time limit per test: 1 second  
memory limit per test: 256 megabytes  
input: standard input  
output: standard output

points: 100 · problem code: summingsequence · author: jszqlw

## Problem Statement

You have an array  $a$  of  $n$  non-negative integers. You wish to decrease some (any number) of the integers so that they remain non-negative and the sum of the sequence is equal to  $k$ . In other words, you can form a new sequence  $b$  of length  $n$  such that  $0 \leq b_i \leq a_i$  and  $\sum_{x \in b} x = k$ .

Determine the number of distinct ways to do this modulo 998244353. We call two ways distinct if the resulting sequences after decreasing some of the integers have a different number at some index.

## Input Format

Your first line will contain two integers  $n$  and  $k$ . Your next line will contain  $n$  space-separated integers representing  $a$ .

## Output Format

Output a single integer representing the number of ways modulo 998244353.

## Constraints

- $1 \leq n, k \leq 3 \cdot 10^4$
- $1 \leq a_i \leq 15$

## Sample Cases

### Input 1

```
4 3
1 1 1 1
```

### Output 1

```
4
```

### Explanation 1

The different sequences you can make are  $[0, 1, 1, 1]$ ,  $[1, 0, 1, 1]$ ,  $[1, 1, 0, 1]$  and  $[1, 1, 1, 0]$ .

### Input 2

```
3 28
10 10 10
```

### Output 2

```
6
```

### Explanation 2

There are 3 ways if you decrease one of the 10s to an 8, 3 ways where you decrease 2 of the 10s to 9s.

### Input 3

```
15 33
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
```

### Output 3

509689781

### Explanation 3

Remember to modulo by 998244353.