G - Linear Inequation

Editorial (/contests/abc436/tasks/abc436_g/editorial)

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 600 points

Problem Statement

You are given a length-N sequence of positive integers $A = (A_1, A_2, \ldots, A_N)$ and a positive integer M.

Find the number of length-N sequences of non-negative integers $x = (x_1, x_2, \ldots, x_N)$ that satisfy the following condition:

- $\displaystyle\sum_{i=1}^{N} A_i x_i \leq M$

The number can be very large, so find it modulo 998244353.

Constraints

- $1 \leq N \leq 100$
- $1 \leq A_i \leq 100$ $(1 \leq i \leq N)$
- $1 \leq M \leq 10^{18}$
- All input values are integers.

Input

The input is given from Standard Input in the following format:

$$N \quad M$$
$$A_1 \quad A_2 \quad \ldots \quad A_N$$

Output

Print the number, modulo 998244353, of non-negative integer sequences that satisfy the condition.

Sample Input 1

Copy

```
4 6
5 4 3 2
```

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Sample Output 1

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```
10
```

The sequences x that satisfy the condition are the following 10:
$(0,0,0,0), (0,0,0,1), (0,0,0,2), (0,0,0,3), (0,0,1,0), (0,0,1,1), (0,0,2,0), (0,1,0,0), (0,1,0,1), (1,0,0,0)$
.

Thus, print `10`.

Sample Input 2

```
6 89
4 7 5 10 7 6
```

Sample Output 2

```
38469
```

Sample Input 3

```
1 1000000007
1
```

Sample Output 3

```
1755655
```

There are 1000000008 sequences x that satisfy the condition.

Print this modulo 998244353, which is 1755655.

Sample Input 4

```
20 738894495848985641
40 58 13 24 65 11 63 29 98 75 40 77 15 50 83 85 35 46 38 37
```

Sample Output 4

```
31156940
```

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