# E. The Child and Binary Tree

time limit per test: 7 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Our child likes computer science very much, especially he likes binary trees.

Consider the sequence of $n$ distinct positive integers: $c_1, c_2, ..., c_n$. The child calls a vertex-weighted rooted binary tree *good* if and only if for every vertex $v$, the weight of $v$ is in the set $\{c_1, c_2, ..., c_n\}$. Also our child thinks that the *weight* of a vertex-weighted tree is the sum of all vertices' weights.

Given an integer $m$, can you for all $s$ $(1 \le s \le m)$ calculate the number of good vertex-weighted rooted binary trees with weight $s$? Please, check the samples for better understanding what trees are considered different.

We only want to know the answer modulo $998244353$ $(7 \times 17 \times 2^{23} + 1$, a prime number).

## Input

The first line contains two integers $n, m$ $(1 \le n \le 10^5; 1 \le m \le 10^5)$. The second line contains $n$ space-separated pairwise distinct integers $c_1, c_2, ..., c_n$. $(1 \le c_i \le 10^5)$.

## Output

Print $m$ lines, each line containing a single integer. The $i$-th line must contain the number of good vertex-weighted rooted binary trees whose weight exactly equal to $i$. Print the answers modulo $998244353$ $(7 \times 17 \times 2^{23} + 1$, a prime number).

### Examples

| input |
| --- |
| 2 3<br>1 2 |

| output |
| --- |
| 1<br>3<br>9 |

| input |
| --- |
| 3 10<br>9 4 3 |

| output |
| --- |
| 0<br>0<br>1<br>1<br>0<br>2<br>4<br>2<br>6<br>15 |

| input |
| --- |
| 5 10<br>13 10 6 4 15 |

| output |
| --- |

```
0
0
0
1
0
1
0
2
0
5
```

### Note

In the first example, there are $9$ good vertex-weighted rooted binary trees whose weight exactly equal to $3$: