Mirror Stairs

In an ancient temple, there stand two grand staircases, side by side. Each staircase has N steps, and together they form the Mirror Stairs — two parallel ascents, always climbing higher.

On every step:

- The left staircase (Array A) must rise strictly upward.

- The right staircase (Array B) must also rise strictly upward.

- And most importantly: for each step i, the left stair must always be below its mirrored partner on the right — the left stair cannot outpace the right.

The temple guardians have already placed some sacred numbers on certain steps, carved from the set {1, 2, …, 2N}. No number may appear twice, and every number must find its rightful step.

Your task is to count how many possible ways there are to complete the Mirror Stairs so that:

- Both staircases ascend strictly,

- The left always remains below the right,

- All numbers from 1 to 2N are used exactly once.

Since the guardians only care about the count, give your answer modulo 998244353.

Input Format

- First line contains an integer N (1 ≤ N ≤ 20)

- Second line contains X integers: first integer is the count of fixed elements in array A, followed by the fixed elements

- Third line contains Y integers: first integer is the count of fixed elements in array B, followed by the fixed elements

Constraints

- 1 ≤ N ≤ 20

- Fixed elements are distinct integers between 1 and 2N

- No element appears in both arrays' fixed positions

Output Format

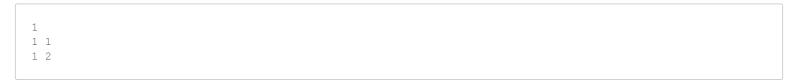Print the number of valid arrangements modulo 998244353.

Sample Input 0

```
1
0
0
```

Sample Output 0

```
1
```

Sample Input 1

```
1
1 1
1 2
```

Sample Output 1

```
1
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