

Elemental Orbs



You have a shop that sells magical orbs, where each orb contains the power of some distinct element (e.g., Fire, Water, Earth, etc.). Each of the s shelves in your shop has the following properties:

- A row of n slots, where each slot can hold exactly 1 orb.
- A type limit, e , denoting the maximum number of distinct types of orbs it can store.

To fill a shelf, you conjure n orbs of up to e different types; however, each orb type i has a *blasting threshold*, b_i , meaning that if there are more than b_i contiguously-placed orbs of element type i placed anywhere on the shelf, they will explode and destroy the shelf. Note that a shelf may contain less than e distinct types of orbs as long as the configuration will not explode.

You are given the values of n , e , and the blasting threshold for s shelves. For each shelf, find and print the number of distinct ways to arrange orbs on the shelf without it exploding, modulo $10^9 + 7$, on a new line.

Note: All orbs of the same element type are identical, but each slot in a shelf is distinct. You can conjure any type of orb an infinite number of times, and all n slots in a shelf must always be filled.

Input Format

The first line contains an integer, s , denoting the number shelves. The $2 \cdot s$ subsequent lines describe each shelf over two lines:

1. The first line contains two space-separated integers describing the respective values of n (the shelf's capacity) and e (the number of types of elemental orbs you can conjure to store in that shelf).
2. The second line contains e space-separated integers describing b_0, b_1, \dots, b_{e-1} (i.e., the respective blasting thresholds for each type of orb that can be stored on that shelf).

Constraints

- $1 \leq s \leq 10$
- $1 \leq n \leq 2000$
- $1 \leq e \leq 2000$
- $1 \leq b_i \leq n$

Output Format

For each shelf, print an integer on a new line describing the number of distinct ways to arrange n conjured orbs on the shelf, modulo $10^9 + 7$.

Sample Input 0

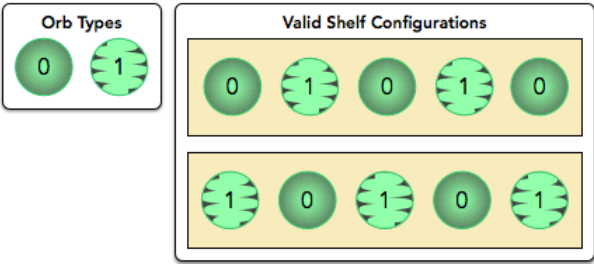
```
2
5 2
1 1
5 2
5 5
```

Sample Output 0

```
2
32
```

Explanation 0

The diagram below depicts the possible valid and invalid configurations for the first shelf, described as $n = 5$, $e = 2$, and $b = [1, 1]$:



Because the blasting threshold for both types of orbs is **1**, any configuration containing more than **1** consecutive orb of the same type will cause the shelf to explode. As there are only two valid configurations for this shelf, we print the result of $2 \bmod (10^9 + 7) = 2$ on a new line.