Ivancho is wondering what is the number of valid expressions consisted of K types of brackets and ai pairs of brackets of each type is.

You are a friend of him and want to create the program **brackets**, which by given Q queries of type k( the number of types of brackets you have) and a1,a2,…,ak – the number of pairs of brackets of each type, prints the number of valid bracket expressions with the given brackets.

A valid bracket expression is, naturally, one where between each pair of opening bracket and its corresponding closing bracket is either another valid expression or nothing,

**Input**

On the first row of the input file *brackets.in* is given number Q. On the next 2\*Q rows are given k and a1,a2,…, ak for each query.

**Output**

On Q rows of the input file *brackets.out* you have to print one number – the number of wright bracket expressions for each query.

Note: These numbers can be extremely big so you have to print them modulo 1,000,000,007 = 109+7.

**Constrains**

0<Q<=100 000

0<k<=10

0<ai<=1 000 000

Note! The memory limit is 16 MB.

**Example**

|  |  |
| --- | --- |
| **Input (brackets.in)** | **Output (brackets.out)** |
| 5  1  1  1  3  2  1 2  4  1 1 1 1  3  1 2 1 | 1  5  15  336  168 |

**Explanation**1 - ()

2 - ()()() , ((())), ()(()), (())(), (()()),

3 - ()[][] , []()[] , [][]() , ([[]]) , [[()]] , [([])] , ()[[]] , []([]) , [][()] , [()][] , [[]]() , ([])[] , ([][]) , [()[]] , [[]()]

4 – Too much brackets

5 – Too much brackets