Brackets

Ivancho is wondering what is the number of valid expressions consisted of K types of brackets and a_i 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 $a_1, a_2, \ldots, a_k$ – 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 $a_1, a_2, \ldots, a_k$ 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 $1,000,000,007 = 10^9 + 7$.

Constrains

0<Q<=100 000

0<k<=10

0<a_i<=1 000 000

Note! The memory limit is 16 MB.

Example

Input (brackets.in)	Output (`brackets.out`)
5 1 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