

# Colorful Blocks

Rith, the student of the month has received  $k$  sets of colored blocks. Each set is of a different color and each block in a set is identical to any other block. Rith has  $n$ -types of colors and has  $a_1, a_2, a_3 \dots$  an number of blocks for each color respectively. He arranges these blocks in a straight line, and wants to know the number of ways he can arrange it. Please help him find out the number of ways. Oh and Rith knows that this number will be very large, and hence asks you to find it modulo 1,000,000,009 (A number modulo  $P$  is the remainder that is left after dividing that number by  $P$ )

For example if Rith has 2 types of colors and  $\{a_1, a_2\} = \{1, 2\}$

Then the following arrangements are possible

(Digit here means the color)

122

212

221

Hence the answer is 3.

## Input

The first line contains an integer  $T$ , which is the number of test cases. Then there are  $T$ -test case blocks which follow.

Each test-case block starts with an integer  $n$ , which is the number of types of colors.

The next line contains  $n$ -integers  $a_1, a_2, a_3 \dots$  as described in the statement.

$T \leq 100$

$1 \leq n \leq 100$

$a_1 + a_2 + a_3 \dots + a_n \leq 200,000$

## Output

Print the number of ways as described modulo 1,000,000,009

## Example

**Input:**

3

2

1 2

3

1 1 1

5

200 200 200 200 200

**Output:**

3

6

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