Many polygons

There is a regular n-gon. We mark some points on its sides: a1 points on the first side, a2 on the second ... an on the last. Marked points do not coincide with the vertices n-gon. The question is, how many different convex nondegenerate (n-1)-gons you can build, using marked points as vertices?

Input

The first line of input contains the number t - the number of tests. Next comes the description of t tests. Each test consists of two lines. The first line of the test contains an integer n - number of vertices of original n-gon. Second line of the test lists n integers a1, a2, ..., an - number of points marked on each side.

Constraints

$1 <= t <= 20$
$4 <= n <= 1000$
$1 <= ai <= 100$

Output

For each test, print out the answer to the problem modulo 1000000007.

Example

Input:
3
4
2 2 2 2
5
2 2 2 2 2
5
10 20 30 40 50

Output:
56
210
16207125