I. Null Void

Score: 1

CPU: 1s
Memory: 1024MB

Bad news for Benjamin Tennyson. He is imprisoned in the Null Void by Vilgax. How? Well, that's a long story. We'll talk about that some other day. Good ol' Grandpa Max is trying to open a portal using the Null Void Projector, so that Ben can escape the prison. Meanwhile Ben has to keep dodging the Null Guardians' attack.

You probably know that the best weapon in the Null Guardians' arsenal is red energy blast from mouth. The Null Void is a multi-dimensional space, which can be described using Cartesian co-ordinate system. As Null Void is full of rocks, only the integer co-ordinates can be accessed. The red blast of the Null Guardians can harm Ben if Manhattan distance between Ben and a Null Guardian is equal to their Euclidean distance.

You'll be given the dimension of Null Void, and limits of those dimensions. If the limit of the ith dimension is A_i, then points in range $[0, A_i)$ are accessible. For example, let's say there are 2 dimensions and their limits are 2 and 3 respectively. Then the accessible points are (0, 0), (0, 1), (0, 2), (1, 0), (1, 1) and (1, 2). You'll have to count the number of pairs of points, which can be deadly for Ben, if he stands at one of those two points and a Null Guardian at the other one. As the Null Void is a weird place, both Ben and a Null Guardian can stand at the same point at the same time. Ben's Omnitrix is out of charge, and he can't turn himself into Grey Matter and compute this himself. You are his only hope to solve this problem.

Here is how to compute Manhattan and Euclidean distances between two points P and Q in N-dimensional space.

Manhattan(P, Q) = $|P_{a_0} - Q_{a_0}| + |P_{a_1} - Q_{a_1}| + |P_{a_2} - Q_{a_2}| + ... + |P_{a_n} - Q_{a_n}|$

Euclidean(P, Q) = $\sqrt{(P_{a_0} - Q_{a_0})^2 + (P_{a_1} - Q_{a_1})^2 + (P_{a_2} - Q_{a_2})^2 + ... + (P_{a_n} - Q_{a_n})^2}$
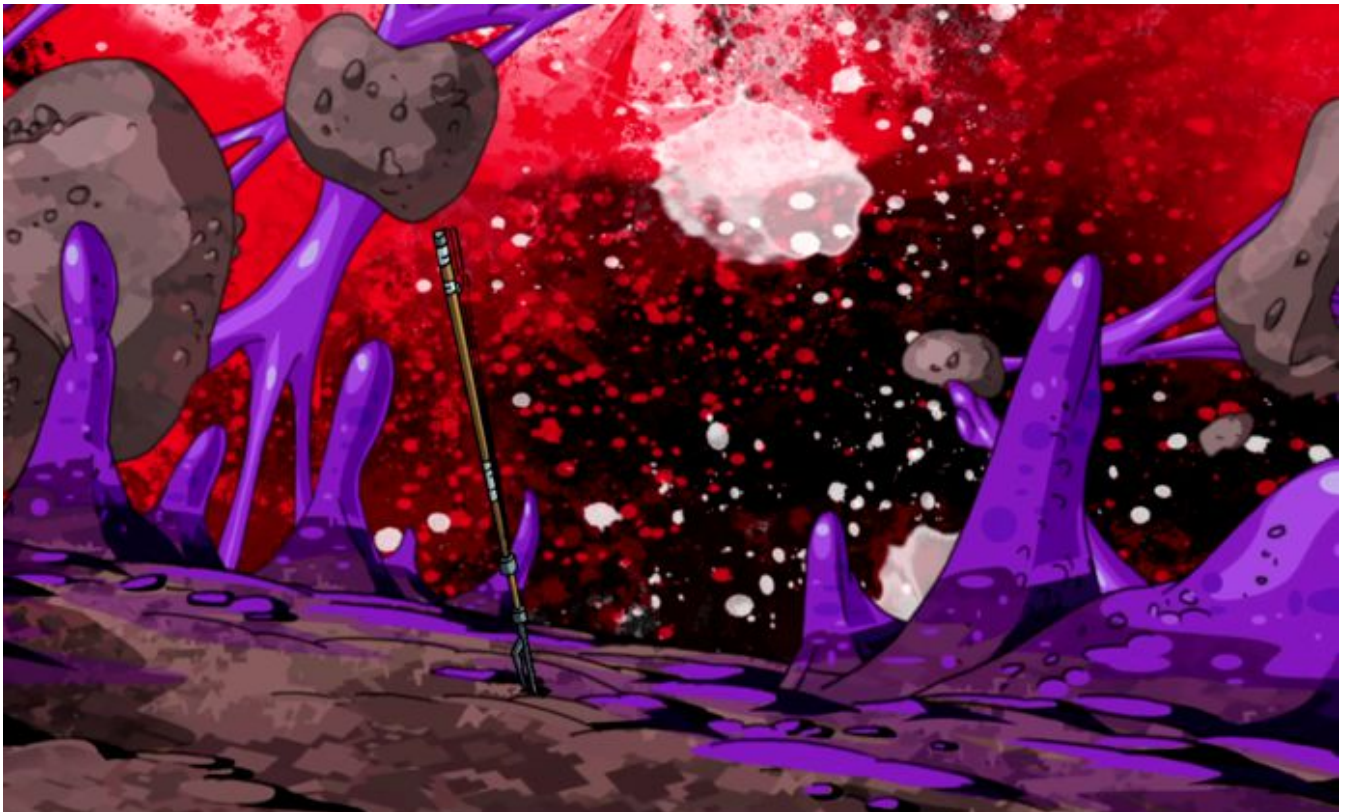
Input

Input starts with an integer $T(1 \le T \le 20)$, denoting the number of test cases. Each case contains and integer $N(1 \le N \le 10^5)$, indicating the number of dimensions of Null Void. The next line will contain N integers $A_i(1 \le A_i \le 10^9)$, denoting the limit of ith dimension, separated by spaces.

Output

For each case of input, print the case number and the ans of that case modulo **1000000007**.

Sample

Input	Output
3	Case 1: 24
2	Case 2: 44352
2 3	Case 3: 345259446
3	
9 11 14	
2	
16661 700666007	