There are N jars. Each of the jars are labeled from 1 to N. Each jar contains marbles. The quantity of marbles in the jars is M_1, M_2, M_3, ..., M_n, where M_1 is the number of marbles in the first jar and so on. All the jars contain marbles that weighs 1 gram, except one jar that contains marbles weighing 1.1 grams. Let's call this jar "**The Fat Jar**".

You have a weighing machine, but you are allowed to use it **exactly once**. You need to find out the fat jar.

One neat way to find the fat jar is, (assuming we have enough marbles in each jar) take 1 marble from the 1st jar, 2 from 2nd jar, 3 from 3rd jar and so on. Let's say we have 4 jars in total. So ideally, the marbles should weigh 10grams collectively. Suppose, it weighs 10.3 grams. What does that tell us? The third jar has to be the fat jar. Because the extra 0.3 grams must have came from the three marbles that we took from the third jar.

Interestingly, there are several other ways to find out the fat jar. We call each way a "**Strategy**". Formally, a strategy is an array of N positive numbers: X_1, X_2, X_3, ..., X_n, such that we take X_1 marbles from the first jar, X_2 marbles from the second jar and so on. We weigh $X_1 + X_2 + X_3 + \ldots + X_n$ marbles in the weighing machine and try to find out the fat jar. A strategy is called "**Winning**" when it is always possible to find the fat jar following that strategy.

Given N jars with the number of marbles in each jar, how many different winning strategies are there? Two strategies are different if there exists an index i, for which X_i is different between those strategies.

Input

First line contains the T ($0 < T \leq 100$), the number of test cases. Each case starts with N ($1 \leq N \leq 100$). Next line contains N integers M_1, M_2, M_3, ..., M_n. (For all i, $1 \leq i \leq N$, $0 \leq M_i \leq 100$).

Output

For each case, print one line, '`Case` C`:` A' (without the quotes). Here C is the case number and A is the answer that case. As the answer can be pretty huge, print the answer modulo 1,000,000,007.

Explanation: The winning strategies in case 3 are {1, 2} and {2, 1}.

Sample Input

```
3
3
1 2 3
3
1 2 2
2
2 2
```

Sample Output

```
Case 1: 1
Case 2: 0
Case 3: 2
```