

# Enough of analyzing, let's play

All of must you know the game of Nim. For those who don't know, I will describe the game in brief:

***There are two players and there are  $N$  piles. Each pile contains some stones. Player 1 takes the first turn, than player 2, than again player 1 and so on. At each turn, the player chooses any ONE pile, and removes at least one stone from it. The player who makes the last move wins.***

Now given  $N$  piles, your task is to find the number of ways Player 1 can start the game so that after his first move, he is in the winning position. That means after Player 1 has removed some stones from any ONE pile, he will surely win the game if he plays optimally no matter how well Player 2 plays the game.

## Input

Input starts with an integer **T** ( $\leq 1000$ ), denoting the number of test cases.

Each case starts with an integer **N** ( $1 \leq N \leq 1000$ ). The next line contains  $N$  integers all less than **1000**. The  $i^{\text{th}}$  integer denotes the number of stones in the  $i^{\text{th}}$  pile.

## Output

For each case, print the desired result.

## Example

Input:

2

3

11 15 8

3

11 15 7

Output:

Case 1: 3

Case 2: 3