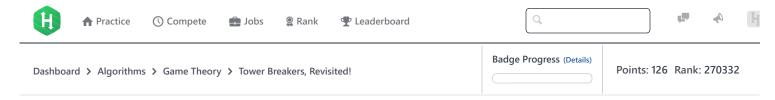
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# Tower Breakers, Revisited! ■



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Two players (numbered 1 and 2) are playing a game of Tower Breakers! The rules of the game are as follows:

- Player 1 always moves first, and both players always move optimally.
- ullet Initially there are  $oldsymbol{N}$  towers of various heights.
- The players move in alternating turns. In each turn, a player can choose a tower of height X and reduce its height to Y, where  $1 \le Y < X$  and Y evenly divides X.
- If the current player is unable to make any move, they lose the game.

Given the value of N and the respective height values for all towers, can you determine who will win? If the first player wins, print 1; otherwise, print 2.

#### **Input Format**

The first line contains an integer, T, denoting the number of test cases.

Each of the  $\mathbf{2}T$  subsequent lines defines a test case. Each test case is described over the following two lines:

- 1. An integer, N, denoting the number of towers.
- 2. N space-separated integers,  $h_0, h_1, \ldots, h_{N-1}$ , where each  $h_i$  describes the height of tower i.

#### **Constraints**

- $1 \le T \le 100$
- $1 \le N \le 100$
- $1 \le h_i \le 10^6$

### **Output Format**

For each test case, print a single integer denoting the winner (i.e., either  ${\bf 1}$  or  ${\bf 2}$ ) on a new line.

#### Sample Input

1 2 3

## **Sample Output**

1

# **Explanation**

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Test Case 0:

Player 1 reduces the second tower to height 1 and subsequently wins.

Test Case 1:

There are two possible moves:

- 1. Reduce the second tower to  ${f 1}$
- 2. Reduce the third tower to 1.

Whichever move player 1 makes, player 2 will make the other move. Thus, player 2 wins.

f in Submissions:<u>1333</u> Max Score:25 Difficulty: Medium Rate This Challenge: ☆☆☆☆☆



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