Tower Breakers, Revisited!

by forthright48

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.
- Initially there are 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 $1 \leq Y < X$ 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 $2T$ 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

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

Output Format

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

Sample Input

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

Sample Output

```
1
2
```

Explanation

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 1
2. Reduce the third tower to 1.

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

Submissions:1333

Max Score:25

Difficulty: Medium

Rate This Challenge:

More

Current Buffer (saved locally, editable) Java 7

```
1  import java.io.*;
2  import java.util.*;
3  import java.text.*;
4  import java.math.*;
5  import java.util.regex.*;
6
7  public class Solution {
8
9      public static void main(String[] args) {
10         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11     }
12 }
```

Line: 1 Col: 1

Upload Code as File Test against custom input Run Code Submit Code

Join us on IRC at #hackerrank on freenode for hugs or bugs.
Contest Calendar | Blog | Scoring | Environment | FAQ | About Us | Support | Careers | Terms Of Service | Privacy Policy | Request a Feature