E. Not a Nim Problem

time limit per test: 2 seconds
memory limit per test: 512 megabytes

Two players, Alice and Bob, are playing a game. They have n piles of stones, with the i-th pile initially containing a_i stones.

On their turn, a player can choose any pile of stones and take any positive number of stones from it, with one condition:

- let the current number of stones in the pile be x. It is not allowed to take from the pile a number of stones y such that the greatest common divisor of x and y is not equal to 1.

The player who cannot make a move loses. Both players play optimally (that is, if a player has a strategy that allows them to win, no matter how the opponent responds, they will win). Alice goes first.

Determine who will win.

Input

The first line contains a single integer t ($1 \le t \le 10^4$) — the number of test cases.

Each test case consists of two lines:

- the first line contains a single integer n ($1 \le n \le 3 \cdot 10^5$);
- the second line contains n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 10^7$).

Additional constraint on the input: the sum of n across all test cases does not exceed $3 \cdot 10^5$.

Output

For each test case, output `Alice` if Alice wins, or `Bob` if Bob wins.

Example

input Copy

```
3
3
3 2 9
4
3 3 6 1
5
1 2 3 4 5
```

output Copy

```
Bob
Alice
Bob
```