

Sabbir and gcd problem

Sabbir is a little boy. He loves math very much. one day his friend taskin gave him a very hard task. taskin gave him n numbers $a_1, a_2, a_3, \dots, a_n$

taskin asked for a minimum integer number x ($x > 1$) such that $\gcd(x, a_1) = 1, \gcd(x, a_2) = 1, \dots, \gcd(x, a_n) = 1,$

in other words you have to find a minimum integer x ($x > 1$) such that

$$\forall i, i \in [1 \dots n], \gcd(x, a_i) = 1$$

Note: gcd is greatest common divisor

Input

In the first line there will be an integer T , denoting the number of test cases,

each test case is consists of 2 lines..

in the first line there will be n , denoting the number of integers and next line contains n space separated integers $a_1, a_2, a_3, \dots, a_n$.

$$1 \leq T \leq 10$$

$$1 \leq n \leq 10^5$$

$$1 \leq a_i \leq 10^7$$

Output

for every case print one integer x in one line .

Note: x should be greater than 1.

Example

Input:

```
3
3
5 7 25
4
1 2 3 4
1
2
```

Output:

```
2
5
3
```