

Brick by Brick

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

points: 100 · problem code: brickbybrick1 · author: PhuQDang

You are given an infinite box of bricks where each brick has dimension $a \times b$. By placing bricks side by side, you can construct a rectangle.

You are asked to construct a series of n rectangles. Each rectangle must have some length-to-width ratio $1 : m_i$. For each rectangle, determine the minimum number of bricks you'd need to construct such a rectangle.

Input

The first line contains an integer n , the number of rectangles you need to construct.

The second line contains two space-integers a and b representing the dimensions of the bricks.

The next n lines each contain a single integer m_i representing the ratio of the rectangle you need to construct.

Output

For each $1 \leq i \leq n$, output the minimum number of bricks needed to construct a rectangle with a length-to-width ratio of $1 : m_i$.

Constraints

- $1 \leq a, b \leq 1000$
- $1 \leq m \leq 10^9$

Example 1

Input

```
3
2 3
1
2
5
```

Output

```
6
3
30
```

Explanation

Each brick has dimension 2×3 .

The first query **1** asks you to construct a rectangle with a length-to-width ratio of $1 : 1$. We can do this with 6 bricks:

```
111222
111222
333444
333444
555666
555666
```

where each distinct number represents a particular brick (for example, all the **1** s represent the first brick). This resulting rectangle has dimension 6×6 , which is in a $1 : 1$ ratio.