Geometric Sequence

Time limit: 0.6s   **Memory limit:** 64M

A sequence of integers is called a geometric sequence if the ratio of consecutive numbers is constant.
For example, $(3, 6, 12, 24)$ is a geometric sequence (each term is equal to twice the previous number).

Now, with such a sequence, we will shuffle it around and remove some of the elements.
Given the result of such a transformation, try to recover the "geometric ratio" of the original sequence.

If there are multiple values, output the one with the greatest absolute value (if there's still a tie, output the positive one).
If there is no such sequence, output `0`.

Input Specification

The number of integers, $2 \leq N \leq 100\,000$.
N lines, each with one non-zero integer x ($|x| \leq 10^{18}$).

Output Specification

The ratio of the original sequence (if one exists).
The relative error of the answer must be within 10^{-9}.

$$\frac{|\text{answer} - \text{expected}|}{|\text{expected}|} < 10^{-9}$$

Sample Input

```
3
1
3
27
```

Sample Output

```
3
```

The original sequence could have been $1, 3, 9, 27$ or $27, 9, 3, 1$; the former has the greater ratio.