# A Brand New Geometric Problem

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|---|---|
| Input file: | `standard input` |
| Output file: | `standard output` |
| Time limit: | 5 seconds |
| Memory limit: | 1024 megabytes |

You are a magician in a high-dimensional space, and you have an initial $n$-dimensional hypercube with edge lengths $a_1, a_2, \ldots, a_n$. For a $d$-dimensional hypercube, the edge length sum is defined as $\sum_{i=1}^{d} a_i$, and its hypervolume is $\prod_{i=1}^{d} a_i$.

You want to obtain a hypercube with edge length sum $S$ and hypervolume $M$. To achieve this, you can perform both dimensional reduction and dimensional expansion operations on the current hypercube.

- Dimensional Reduction: Remove a dimension.
- Dimensional Expansion: Add a new dimension, with its edge length being any positive integer.

Both operations are very exhausting, so you want to determine the minimum number of operations required to obtain a hypercube with edge length sum $S$ and hypervolume $M$.

## Input

The first line contains three integers $n, S, M$ ($1 \le n \le 10^5$, $1 \le S, M \le 10^{10}$).

The second line contains $n$ integers, representing the initial edge lengths $a_i$ of the hypercube ($1 \le a_i \le 10^{10}$).

## Output

Output a single integer representing the minimum number of operations required. If it is impossible to obtain a hypercube that meets the conditions, output $-1$.

## Examples

| standard input | standard output |
|---|---|
| 2 5 6<br>1 2 | 2 |
| 3 6 5<br>1 2 3 | 3 |
| 2 114514 735134400<br>114 514 | 20 |
| 2 4 7<br>1 3 | -1 |

## Note

For the first sample, one possible approach: first delete the dimension with edge length 1, and then add a dimension with edge length 3.