Problem F. Tourist

Input file:	standard input
Output file:	standard output
Time limit:	1 second
Memory limit:	256 megabytes

On the Codeforces platform, each user has a rating to measure his level. In addition, each user will also have a title based on his rating. Recently, because user Tourist's rating exceeded 4000 points, Codeforces administrators decided to provide a new title, "**Tourist**", to commemorate this feat.

You also want to get this title, because it's cool to be called a "Tourist"! But your current rating is only 1500 points, which is not enough to get this honor. So, you let the GPT predict your rating changes in the next n contests. Specifically, suppose your rating is b points before the i-th contest, then after the i-th contest, the GPT predicts that your rating will become $b + c_i$ points. You want to know after which of those n contests you will get the title of "Tourist" for the **first time**, or there is no such contest.

Note that the rating may become negative during this process, and the "Tourist" title will be awarded to users with a rating of **at least** 4000 points.

Input

The first line contains a single integer n ($1 \le n \le 10^5$), representing the number of contests in the future.

The second line contains n integers $c_1, c_2, \ldots, c_n$ ($|c_i| \le 10^9$). Where c_i indicates the change in rating after the i-th contest.

Output

Output a single integer representing the index of the contest after which you will get the title of "Tourist" for the **first time**. If such a contest does not exist, output '-1'.

Examples

standard input	standard output
5 1000 1000 1000 -5000 1000	3
5 20 -100 10 -150 5	-1