

Problem I. Long Sequence

Time limit 2000 ms

Mem limit 1048576 kB

Problem Statement

We have a sequence of N positive integers: $A = (A_1, \dots, A_N)$.

Let B be the concatenation of 10^{100} copies of A .

Consider summing up the terms of B from left to right. When does the sum exceed X for the first time?

In other words, find the minimum integer k such that:

$$\sum_{i=1}^k B_i > X.$$

Constraints

- $1 \leq N \leq 10^5$
- $1 \leq A_i \leq 10^9$
- $1 \leq X \leq 10^{18}$
- All values in input are integers.

Input

Input is given from Standard Input in the following format:

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N
A_1 ... A_N
X
```

Output

Print the answer.

Sample 1

Input	Output
3 3 5 2 26	8

We have $B = (3, 5, 2, 3, 5, 2, 3, 5, 2, \dots)$.

$\sum_{i=1}^8 B_i = 28 > 26$ holds, but the condition is not satisfied when k is 7 or less, so the answer is 8.

Sample 2

Input	Output
4 12 34 56 78 1000	23