Problem J. Long Sequence

Time limit 2000 ms
Mem limit 1048576 kB

Problem Statement

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

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

Input

Input is given from Standard Input in the following format:

N
$A_1 \ \ldots \ A_N$
X

Output

Print the answer.

Sample 1

Input	Output
3 3 5 2 26	8

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

$\sum_{i=1}^{8} B_i = 28 > 26$ 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