G: Non-negative Partial Sums

Time Limit: 1 second(s)

You are given a sequence of n numbers $a_0, \ldots, a_{n-1}$. A cyclic shift by k positions ($0 \le k \le n-1$) results in the following sequence: $a_k,\ a_{k+1},\ \ldots,\ a_{n-1},\ a_0,\ a_1,\ \ldots,\ a_{k-1}$. How many of the n cyclic shifts satisfy the condition that the sum of the first i numbers is greater than or equal to zero for all i with $1 \le i \le n$?

Input

A test case consists of two lines. The first contains the number n ($1 \le n \le 10^6$), the number of integers in the sequence. The second contains n integers $a_0,\ \ldots,\ a_{n-1}$ ($-1000 \le a_i \le 1000$) representing the sequence of numbers.

Output

Print one line of output with the number of cyclic shifts of the given sequence which satisfy the condition stated above.

Sample Input and Output

Sample Input 1	Output for Sample Input
3	3
2 2 1	

Sample Input 2	Output for Sample Input
3	2
-1 1 1	

Sample Input 3	Output for Sample Input
1	0
-1	