Problem I. Interval Addition

Input file:	*standard input*
Output file:	*standard output*
Time limit:	4 seconds
Memory limit:	512 mebibytes

You are given an array a of n integers. You can perform operations on this array. In a single operation, you can add any real number x to some consecutive interval of a.

Determine the minimum number of operations that have to be performed to make all elements of a equal to 0.

Input

The first line contains an integer n ($1 \le n \le 23$).

The second line contains the array $a_1, a_2, \ldots, a_n$ ($0 \le a_i \le 10^9$).

Output

Print a line with a single integer: the minimum number of operations needed.

Examples

standard input	*standard output*
5 1 2 3 2 1	3
6 1 1 4 5 1 4	4