E. Vladik and cards

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Vladik was bored on his way home and decided to play the following game. He took n cards and put them in a row in front of himself. Every card has a positive integer number not exceeding 8 written on it. He decided to find the longest subsequence of cards which satisfies the following conditions:

- the number of occurrences of each number from 1 to 8 in the subsequence doesn't differ by more then 1 from the number of occurrences of any other number. Formally, if there are c_k cards with number k on them in the subsequence, than for all pairs of integers the condition $|c_i - c_j| \leq 1$ must hold.
- if there is at least one card with number x on it in the subsequence, then all cards with number x in this subsequence must form a continuous segment in it (**but not necessarily a continuous segment in the original sequence**). For example, the subsequence $[1, 1, 2, 2]$ satisfies this condition while the subsequence $[1, 2, 2, 1]$ doesn't. Note that $[1, 1, 2, 2]$ doesn't satisfy the first condition.

Please help Vladik to find the length of the longest subsequence that satisfies both conditions.

Input

The first line contains single integer n $(1 \leq n \leq 1000)$ — the number of cards in Vladik's sequence.

The second line contains the sequence of n positive integers not exceeding 8 — the description of Vladik's sequence.

Output

Print single integer — the length of the longest subsequence of Vladik's sequence that satisfies both conditions.

Examples

input
3 1 1 1
output
1

input
8 8 7 6 5 4 3 2 1
output
8

input
24 1 8 1 2 8 2 3 8 3 4 8 4 5 8 5 6 8 6 7 8 7 8 8 8
output
17

Note

In the first sample all the numbers written on the cards are equal, so you can't take more than one card, otherwise you'll violate the first condition.