# G. Four Melodies

time limit per test: 5 seconds
memory limit per test: 1024 megabytes
input: standard input
output: standard output

*Author note: I think some of you might remember the problem "Two Melodies" from Eductational Codeforces Round 22. Now it's time to make it a bit more difficult!*

Alice is a composer, and recently she had recorded two tracks that became very popular. Now she has got a lot of fans who are waiting for new tracks.

This time Alice wants to form four melodies for her tracks.

Alice has a sheet with $n$ notes written on it. She wants to take four such non-empty non-intersecting subsequences that all of them form a *melody* and sum of their lengths is maximal.

*Subsequence is a sequence that can be derived from another sequence by deleting some elements without changing the order of the remaining elements.*

Subsequence forms a melody when each two adjacent notes either differ by $1$ or are congruent modulo $7$.

You should write a program which will calculate maximum sum of lengths of such four non-empty non-intersecting subsequences that all of them form a melody.

## Input

The first line contains one integer number $n$ ($4 \le n \le 3000$).

The second line contains $n$ integer numbers $a_1, a_2, ..., a_n$ ($1 \le a_i \le 10^5$) — notes written on a sheet.

## Output

Print maximum sum of lengths of such four non-empty non-intersecting subsequences that all of them form a melody.

### Examples

| input |
| --- |
| 5<br>1 3 5 7 9 |

| output |
| --- |
| 4 |

| input |
| --- |
| 5<br>1 3 5 7 2 |

| output |
| --- |
| 5 |

## Note

In the first example it is possible to compose $4$ melodies by choosing any $4$ notes (and each melody will consist of only one note).

In the second example it is possible to compose one melody with $2$ notes — $\{1, 2\}$. Remaining notes are used in other three melodies (one note per each melody).