Last level

time limit per test: 0.5 second
memory limit per test: 16 megabytes
input: standard input
output: standard output

You've been stuck on the last level boss of your new video game for several days. In order to master your game, you decide to use your computer skills to write a program that will help you optimize the way you play.

In your game, you can never go back (you can only move to the right), and each level contains powerful bonuses. In the last level, there are 5 types of bonuses (one type of bonus can appear several times within the level), which must be obtained in order:

1) The Cloak of Power
2) The cursed harpoon
3) The Ebony Talisman
4) gloves of fire
5) The Silver Arrow.

Without these 5 items, you have no chance against the boss, so you absolutely must recover them! Thereafter, a type of bonus will be represented by its number (for example 3 for the talisman). You carefully noted the order in which the different types of bonuses appeared during the level.

For example :
3 1 2 1 2 1 4 3 1 3 2 2 4 3 5 3 4 5 1 4 2 5 4 3 4 5 5 1.

You can reach the boss five times with the five types of bonuses, by proceeding as presented below. The bonuses chosen each round are in green, and those that are no longer available are marked with an "X":

```
round #1: 3 1 2 1 2 1 4 3 1 3 2 2 4 3 5 3 4 5 1 4 2 5 4 3 4 5 5 1
round #2: 3 1 2 1 2 1 4 3 1 3 2 2 4 3 5 3 4 5 X 4 X 5 4 X X 5 X 1
round #3: 3 1 2 X X 1 4 3 1 X 2 2 4 3 5 3 X X X 4 X 5 4 X X 5 X 1
round #4: 3 1 2 X X 1 4 3 X X X 2 4 X 5 3 X X X 4 X 5 X X X X X 1
round #5: 3 X X X X 1 4 X X X X 2 X X X 3 X X X 4 X 5 X X X X X 1
round #6: 3 X X X X X 4 X X X X X X X X X X X X X X X X X X X X 1
```

At round #6, it is impossible for you to recover the five types of bonuses in order: you have to give up and start over from the very beginning of the game... what a diabolical game!

With the previous strategy, you were able to do five rounds (one round is counted when you reach the boss with all the items).

Write a program that determines the maximum number of rounds you can do.

Input
The first line of input contains a single integer n – the number of bonuses.

The second line contains n integers a_i ($1 \leq a_i \leq 5$) separated by spaces, describing the types of bonuses, in the order of their appearance within the level.

Output
Your program must display a single integer: the maximum number of times it is possible to face the boss.

To get 100 points, your program must be as efficient as possible.

Example

Input

```
28
3 1 2 1 2 1 4 3 1 3 2 2 4 3 5 3 4 5 1 4 2 5 4 3 4 5 5 1
```

Output

```
5
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explanation: as described above