2010 SPY KIDS (PART 2)

Recently there have been suspicions that the teachers in the *Alpha Complex* day-care facilities have been infiltrated by *Beta Complex* teachers. As part of the security review, evaluations are underway to determine if some of the roll-calls have been changed. In particular, questions are being asked as to whether a fixed ordering of students might have multiple roll-calls.

For example, suppose that students are ordered DICK, HARRY then TOM. The roll-call HARRY, TOM then DICK is valid, but so is the roll-call DICK, HARRY then TOM, and the roll-call HARRY, DICK and TOM.

Write a program to determine the number of valid roll-calls for a given ordering. The first line of the input will be a single integer k ($1 \leq k \leq 32$) indicating the number of kids. The next k lines will each contain a single integer (between 1 and 1000 inclusive), the i^{th} of which indicating the number of letters in the i^{th} kid's name (in circle order).

You should output a single integer indicating the number of different valid roll-calls.

SAMPLE INPUT

```
3
4
5
3
```

SAMPLE OUTPUT

```
3
```