

PROBLEMS

SUBMIT CODE

MY SUBMISSIONS

STATUS

STANDINGS

CUSTOM INVOCATION

A. Inscribed Figures

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

The math faculty of Berland State University has suffered the sudden drop in the math skills of enrolling students. This year the highest grade on the entrance math test was 8. Out of 100! Thus, the decision was that the test is becoming easier.

Future students will be asked just a single question. They are given a sequence of integer numbers a_1, a_2, \dots, a_n , each number is from 1 to 3 and $a_i \neq a_{i+1}$ for each valid i . The i -th number represents a type of the i -th figure:

1. circle;
2. isosceles triangle with the length of height equal to the length of base;
3. square.

The figures of the given sequence are placed somewhere on a Cartesian plane in such a way that:

- $(i + 1)$ -th figure is inscribed into the i -th one;
- each triangle base is parallel to OX;
- each square sides are parallel to the axes;
- for each i from 2 to n figure i has the maximum possible length of side for triangle and square and maximum radius for circle.

Note that the construction is unique for some fixed position and size of just the first figure.

The task is to calculate the number of **distinct** points (not necessarily with integer coordinates) where figures touch. The trick is, however, that the number is sometimes infinite. But that won't make the task difficult for you, will it?

So can you pass the math test and enroll into Berland State University?

Input

The first line contains a single integer n ($2 \leq n \leq 100$) — the number of figures.

The second line contains n integer numbers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 3, a_i \neq a_{i+1}$) — types of the figures.

Output

The first line should contain either the word "Infinite" if the number of distinct points where figures touch is infinite or "Finite" otherwise.

If the number is finite than print it in the second line. It's guaranteed that the number fits into 32-bit integer type.

Examples

input	Copy
3 2 1 3	
output	Copy
Finite 7	

input	Copy
3 1 2 3	
output	Copy

Educational Codeforces Round 64
(Rated for Div. 2)

Contest is running

01:27:53

Contestant



→ Submit?

Language: GNU G++11 5.1.0

Choose file:

选择文件

 未选择任何文件

Submit

→ Last submissions

Submission	Time	Verdict
53622018	May/01/2019 18:05	Accepted
53621329	May/01/2019 18:02	Wrong answer on test 3

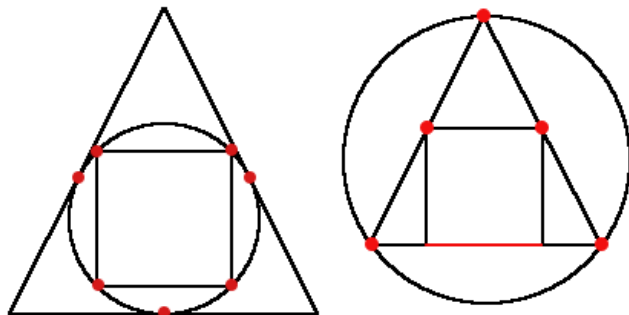
Infinite

Note

Here are the glorious pictures for the examples. Note that the triangle is not equilateral but just isosceles with the length of height equal to the length of base. Thus it fits into a square in a unique way.

The distinct points where figures touch are marked red.

In the second example the triangle and the square touch each other for the whole segment, it contains infinite number of points.



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