Polynomial Maker

Initially, you have two polynomials: a(x)=1 and b(x)=x. You are allowed to construct new polynomials. Each new polynomial must be either the sum or the product of two polynomials you already have.

For example, one way how to construct the polynomial $p(x)=x^2+3x+2$ is this one:

- c(x) = a(x)+b(x) = x+1
- d(x) = c(x)*c(x) = x^2+2x+1
- p(x) = d(x)+c(x) = x^2+3x+2

There are other algorithms how to construct this p(x). Given two algorithms, the one that requires us to construct a smaller number of intermediate polynomials is better. For our polynomial p(x) the presented algorithm is optimal. There is one other optimal algorithm: create c(x) as above, then e(x) = c(x)+a(x) = x+2, and then p(x) = c(x)*e(x).

Task

You are given a non-zero polynomial **p** with small non-negative coefficients. If it is easy to construct, find the number of polynomials constructed by an optimal algorithm (including **p**). See I/O specification for a more precise definition of the problem.

Input

The first line of the input contains an integer **N** ($0 \le N \le 100$) – the degree of the polynomial **p**.

The polynomial **p** can be written as $p_N * x^N + \ldots + p_1 * x + p_0$. The second line of the input contains the integers $p_N, \ldots, p_0$, in this order, separated by single spaces. You may assume that for all **i** we have $0 \le p_i \le 10$. Additionally, $p_N > 0$.

Output

Let **M** be the minimum number of polynomials one has to construct in order to get the given polynomial **p**. If $M \le 6$, output a single line containing **M**. Otherwise, output a single line containing the string "`too complicated`" (quotes for clarity).

Examples

input	output
2 1 3 2	3

This is the polynomial from the problem statement.

input	output
1 1 3	3

To construct x+3, first build x+1, then x+2, then x+3.

input	output
0 10	4

To construct 10, first build 2, then 3, then 5, and finally 2*5=10.

input	output
5 1 2 1 1 2 1	6

One optimal solution is to build:
c(x) = x+1
d(x) = c(x)*c(x) = x^2+2x+1
e(x) = x*x = x^2
f(x) = x*e(x) = x^3
g(x) = f(x)+1 = x^3+1
p(x) = d(x)*g(x) = $x^5+2x^4+x^3+x^2+2x+1$

Another one is to build c(x), e(x), $i(x)=e(x)+x=x^2+x$, $j(x)=e(x)*i(x)=x^4+x^3$, $k(x)=j(x)+c(x)=x^4+x^3+x+1$, and finally p(x)=c(x)*k(x).

input	output
3 10 10 0 1	too complicated

The smallest number of steps to construct the polynomial $p(x) = 10x^3+10x^2+1$ is seven. Seven is more than six, therefore the output is "`too complicated`".

One possible way how to get this $p(x)$ in seven steps is to construct $2x$, $3x$, $5x$, $x+1$, $(2x)*(x+1) = 2x^2+2x$, $(5x)*(2x^2+2x) = 10x^3 + 10x^2$, and finally $p(x)$.