

Problem C. Convert Into Irreducible

Input file: *standard input*
 Output file: *standard output*
 Time limit: 1 second
 Memory limit: 1024 mebibytes

A basic fraction can be represented by three integers (abc) which denotes $a + \frac{b}{c}$ where $1 \leq a, b, c \leq 9$. An extended fraction has the form of $(a' b' c')$ where a' , b' , and c' are either integers between one and nine or other extended fractions. Note that a basic fraction is also an extended fraction, and the length of the fraction is finite.

Given an extended fraction, we want to express its value as an irreducible fraction.

For example, the irreducible fraction of $((124)(523)(43(273)))$ is as follows.

$$\left(1 + \frac{2}{4}\right) + \frac{5 + \frac{2}{3}}{4 + \frac{3}{2 + \frac{7}{3}}} = \frac{991}{366}$$

Given a string form of an extended fraction, write a program that converts the extended fraction into an irreducible fraction.

Input

The input starts with a line containing one integer n ($2 \leq n \leq 100$) where n is the number of characters in the given extended fraction. The second line contains n space-separated characters which are parentheses and digits between 1 and 9: the extended fraction itself.

Output

Print exactly one line. If the answer is x/y , the line should contain two integers x and y which are relatively prime to each other. Otherwise (for example, when the input is not valid), print -1 . It is guaranteed that the answers fit into 64-bit integers.

Examples

standard input	standard output
5 (1 2 3)	5 3
8 (1 2 (3 4 5)	-1
21 ((1 2 4) (5 2 3) (4 3 (2 7 3)))	991 366