Last Minute Preparations

Time Limit: 2.0s   **Memory Limit:** 256M

Ada has a midterm coming up and she wants to skim the textbook of the course as quickly as possible to prepare for it. To save time, she decides not to read anything that is written in parentheses, thinking that whatever is written in there must be of little importance. Help her shorten the N characters long paragraph by replacing the parantheses in the paragraph and the text between them with ellipses! (`...`)

The parentheses in the text will be balanced, i.e., each left parenthesis will have a matching right parenthesis and the pairs of parantheses will be properly nested.

Input

The first line contains a single integer N.

The second line consists of one string S of length N. The string consists of English letters, spaces, and the characters `!"'(),-.:;?`.

- $1 \leq N \leq 5 \times 10^6$

It is guaranteed that there will be **only** one new line character ('\n') and it will always come after the number of characters, N.

Output

Output a single line containing an edited version of the input string where parantheses are replaced by ellipses.

Examples

Input 1:

```
54
A constant (non-random) variable has zero variability.
```

Output 1:

```
A constant ... variable has zero variability.
```

Input 2:

```
452
I must explain to you how all this (the (fallacious and misguided) idea of denouncing
pleasure) was born. I will give you a complete account of the system (and expound the
(actual) teachings of the great explorer of the truth, the master-builder of human
happiness) as no one rejects (or avoids) pleasure itself because it is pleasure, but
because those who don't know how to pursue pleasure (in a rational way) encounter
consequences that are painful.
```

Output 2:

```
I must explain to you how all this ... was born. I will give you a complete account of
the system ... as no one rejects ... pleasure itself because it is pleasure, but because
those who don't know how to pursue pleasure ... encounter consequences that are painful.
```