## All correct parenthesizations                                    P48260_en

Tretzè Concurs de Programació de la UPC - Semifinal (2015-07-01)

Given some pairs of corresponding open and close parenthesis, we can use them to build an infinite number of correct parenthesizations. For instance, with the pairs `( )` and `[ ]`, all correct parenthesizations are defined by the grammar

$$P \rightarrow\ <\text{empty word}>$$
$$P \rightarrow (P)P$$
$$P \rightarrow [P]P$$

Can you generate all correct parenthesizations of a given size?

### Input

Input consists of a non-empty string $s$ and a strictly positive even number $n$. The string $s$ has even size, and includes the corresponding pairs of open and close parenthesis: $s[0]$ with $s[1]$, $s[2]$ with $s[3]$, etc.

### Output

Print all correct parenthesizations of size $n$ that can be made up with the corresponding open and close parenthesis included in $s$.

### Observation

You can print the parenthesizations in any order.

| Sample input 1 | Sample output 1 |
|---|---|
| `() 6` | `()()()`<br>`()(())`<br>`(())()`<br>`(()())`<br>`((()))` |

| Sample input 2 | Sample output 2 |
|---|---|
| `{}()[] 2` | `{}`<br>`()`<br>`[]` |

| Sample input 3 | Sample output 3 |
|---|---|
| `[]() 4` | `[][]`<br>`()[]`<br>`[]()`<br>`()()`<br>`[[]]`<br>`([])`<br>`[()]`<br>`(())` |

## Problem information

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