# 24 Ancient Formulas

*15 points*

## Introduction

Archaeologists found ancient mathematical formulas that use parenthesis "()", brackets "[]" and braces "{}" to group sub-expressions in order to provide better clarity than if they only used parenthesis "()".

Here is an example: [1 + 1] + (2 + { 1 + [ 4 * (2 + 1) + 3]})

In any case, the meaning of these grouping symbols is equivalent and they simply indicate the opening and closing of a sub-expression group.

Interestingly, we discovered that some of the closing symbols do not always match with the opening symbol type. For instance, in the formula "2+({3-2]-1)" the opening symbol '{' should be closed using a matching '}' instead of a ']' for consistency.

You should write a program that reads one of these ancient formulas and adjust any closing symbols to match the corresponding opening symbol type.

## Input

The input is one line with a formula that may contain several grouping symbols. You can assume that the number of opening and closing symbols match and the only problem is with the consistency between the opining type and the corresponding closing type.

## Output

The output corresponds of a first line with the input formula after adjusting any closing symbols that do not match the opening symbol types. And a second line that informs of the number of closing symbols that had to be modified in the original formula to fix it using the format "# fixes made to the formula."; where # is the number of changes.

## Example 1

**Input**

```
2+({3-2]-1)
```

**Output**

```
2+({3-2}-1)
1 fixes made to the formula.
```

## Example 2

**Input**

```
[ sin(1) + rho) + phi (a + { 1 + [ 4 * (2 pi + 1) + b]]]
```

**Output**

```
[ sin(1) + rho] + phi (a + { 1 + [ 4 * (2 pi + 1) + b]})
3 fixes made to the formula.
```