Expression Mania

Amrith is the topper of his class. During an Algorithm lecture, the professor gives him a question to be solved. The professor gives him a valid mathematical expression consisting of variables('a' - 'z'), round parantheses ('(' and ')'), addition operator ('+') and subtraction operator ('-'). The professor asks him to obtain another valid mathematical expression consisting of variables, addition operator ('+') and subtraction operator ('-') only which has the same mathematical value as the initial mathematical expression conntaining round parantheses. The only constraint on the obtained/generated mathematical expression is that every variable in the expression must be preceeded by an addition operator ('+') or a subtraction operator ('-'). Anish, one of Amrith's classmate, wants to prove that he is as brilliant as Amrith and asks Amrith for the problem. Can you help Anish solve the problem?

Input Format

The first line of the input consists of an integer t, which denotes the number of test cases.

There are t lines after the first line in the input, each of which represents a test case. Each test case is represented by its input expression.

NOTE- Assume that a variable occurs only once in the input expression.

Constraints

- 1 <= Number of Test Cases <= 10
- 1 <= Length of the string <= 1000

Output Format

The output will consist of t lines, 1 line corresponding to each test case.

Each test case should output the generated output mathematical expression.

NOTE:- In the output mathematical expression, each variable should be preceeded by '+' or '-'.

NOTE:- Variables occur in the same order in the output expression as it occurs in the input expression.

Sample Input 0

```
3
-(a-b-(-c))
(a+b)
a-b
```

Sample Output 0

```
-a+b-c
+a+b
+a-b
```