

# 10<sup>th</sup> South African Regional ACM Collegiate Programming Contest

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## Problem F - Red Balloon !Pretty Printing

### Problem Description

Johnny's printer has a problem. If Johnny prints mathematical expressions containing parentheses, only left parentheses are printed. Johnny receives a number of expressions (with only left parentheses) and the answer to the expression. He has to devise a way to change the expression so that the parentheses are correct and then check if the answer is correct. For example, if the expression is

$(1+2)*(3+4)$

the following will be received:

$(1+2*(3+4($   
21

Johnny's program must produce the following output:

correct  $(1+2)*(3+4)=21$

### Input

For each expression, input will comprise of 2 lines, the expression that Johnny's printer prints, followed on the next line by the answer.

All input will not be correct. Parentheses may be unbalanced, or the expression will not evaluate to the correct value, once parentheses have been fixed.

## Output

If the parentheses are unbalanced, display 'unbalanced' and if the result of the expression is incorrect, 'incorrect'. In these cases the correct string and answer need not be displayed. The following rules apply:

- All numbers are integers and expressions as well as sub-expressions evaluate to integers
- Integers may consist of more than one digit
- The input will only contain operators + and \*
- The input expressions contain no blanks
- Parentheses may be nested

## Sample Input

```
2*(13+2*(20+3*(9*3+3(((
466
3*(5+2*(6+3((
66
(15+5/(2*2(
20
```

## Sample Output

```
correct 2*(13+2*(20+3*(9+3)))=466
unbalanced
incorrect
```

## Time Limit

5 seconds