

Expressions

Alpha Java Mar'18 - Advanced - 04:59:38

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✓ Points: 100 (partial)② Time limit: 1.0s

C#: 0.8s

■ Memory limit: 16M

C#: 32M

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Coki loves numbers. Yet, he cannot use them. Alas, he is that smart...

Now he wants to calculate expressions! He has digits and a number. His task is to generate all valid mathematical expressions that can be done with the digits by inserting operators '+', '*' or '-', between the digits, excluding at the beginning and the end.

Example:

From 123 the valid expressions are:

Copy



Help Coki to count the expressions, that evaluate to the provided number

Input

123

12+3 = 15 12-3 = 9

= 123

The input will be on the standard input

- On the first line of the input, you will find the sequence of digits
- On the second line of the input, you will find the number

The input will be valid and there is no need to check it explicitly

Output

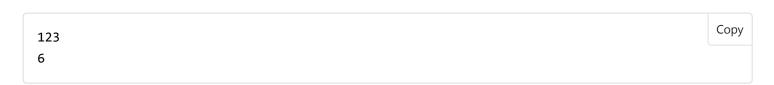
- Print the output on the standard output
- On the first line print the number K
 - The count of possible valid expressions

Constraints

• The digits will always be at most 14

Sample tests

Input





2

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Input

105 5 Сору

Output

2

Сору

Input

000 0 Сору

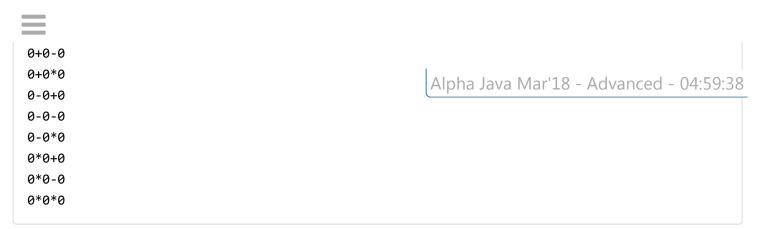
Output

9

Сору

Explanation

Сору



Input

1111 1

Output

7

Clarifications

on Dec. 22, 2017, 2:48 p.m.

The division operator "/" cannot be used. Bug fixed in description

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