Lucky Tickets

Input file:	`standard input`
Output file:	`standard output`
Time limit:	10 seconds
Memory limit:	1024 megabytes

On each tickets issued in public transport in Kazaan, 6 digits number is printed. To pass the time of the trip, young Aliya often plays a game like this: she tries to place arithmetic operations and brackets between the numbers on the ticket number so that the result is an expression equal to 100. At the same time, the numbers between which no operations and brackets were inserted are glued into one number. Aliya has a few rules:

- The numbers in the resulting expression must not contain leading zeros. Moreover, it is not considered that the number 0 contains leading zeros, and therefore it is allowed.
- You can use only operations plus, minus, multiply and divide, as well as negation.
- In the process of calculating the value of an expression, division by 0 should not occur, and the results of all divisions must be integers.

Formally, the expression that Aliya can get must satisfy the following grammar:

- Expression is (term) or (expression «`+`» term) or (expression «`-`» term)
- Term is (factor) or (term «`*`» factor) or (term «`/`» factor)
- Factor is (number) or («`-`»factor) or («`(`» expression «`)`»)
- Number is a sequence of digits without leading zeros

Here are examples of some correct expressions, as well as the numbers to which they are equal: `2*(3+4)` $= 14$, `0+0` $= 0$, `--239--179` $= (-(-239)) - (-179) = 239 + 179 = 418$, `(17+13)/6` $= 5$, `0/10` $= 0$ (zero can be divided), `-(21+12)` $= -33$, `(((8))*(9))` $= 72$.

Here are examples of some incorrect expressions: `2(3+4)`, `2**2`, `-239-179-`, `17+13/6` (because 13 cannot be divided by 6), `10/0` (you cannot divide by zero), `0/0` (even so), `1+()`.

Aliya asks you to help her find such expressions for all possible ticket numbers. She understands that you may not be able to find expressions for all numbers. And for some numbers such expressions do not exist at all. However, the more numbers for which you find the desired expression, the better.

Input

The input consists of several lines. Each line contains 6 digits, the ticket number.

Output

For each ticket number print the desired expression, or «`No solution`», if such an expression does not exist or you could not find it.

Example

standard input	standard output
123456	1+(2+3+4)*(5+6)
987654	9+87+(6-5)*4
111111	(111-11)/1
000000	No solution
001000	0+0+100+0

Note

There is only one test in this task, except for an example. It lists all ticket numbers in ascending order. For each number, you should output the correct expression or the string «`No solution`». Otherwise, you will receive 0 points.

If the output format is correct, your output will be evaluated based on the number of numbers for which you have found the desired expression. Let x be the number of numbers for which you have found the desired expression, and T be the number of numbers for which such an expression exists.

The points for your output is $\lfloor score(x) \rfloor$, where *score* is a piecewise linear function, the break points of which are the points $(0, 0)$, $(5, 5)$, $(55, 10)$, $(555, 15)$, $(5555, 20)$, $(55555, 25)$, $(T-55555, 75)$, $(T-5555, 80)$, $(T-555, 85)$, $(T-55, 90)$, $(T-5, 95)$, $(T, 100)$.

Formally, $score(x)$ can be calculated as follows:

x	$score(x)$
$0 \le x < 5$	x
$5 \le x < 55$	$5 + \frac{x-5}{10}$
$55 \le x < 555$	$10 + \frac{x-55}{100}$
$555 \le x < 5\,555$	$15 + \frac{x-555}{1\,000}$
$5\,555 \le x < 55\,555$	$20 + \frac{x-5\,555}{10\,000}$
$55\,555 \le x < T - 55\,555$	$25 + 50 \cdot \frac{x-55\,555}{T-55\,555\cdot 2}$
$T - 55\,555 \le x < T - 5\,555$	$75 + \frac{x-(T-55\,555)}{10\,000}$
$T - 5\,555 \le x < T - 555$	$80 + \frac{x-(T-5\,555)}{1\,000}$
$T - 555 \le x < T - 55$	$85 + \frac{x-(T-555)}{100}$
$T - 55 \le x < T - 5$	$90 + \frac{x-(T-55)}{10}$
$T - 5 \le x \le T$	$95 + (x - (T - 5))$