Problem F. Encryption Function

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	64 mebibytes

After her computer class Sophie invented her own encrypting function, which takes a number as an input. Given a number it treats it as a sequence of base-10 digits (with no leading zeroes), masks out every possible subset of positions in this sequence, interprets the new sequence as a base-10 number (possibly with leading zeroes) and adds all numbers obtained in such a way. So far Sophie failed to devise a decryption algorithm. Help her–write a program that decrypts the encrypted number.

Input

Input consists of a single positive integer n ($1 \le n \le 10^{18}$), this is the output of Sophie's encryption function.

Output

In the first and only line of the output you should write a single positive integer m, for which the encrypted value is n, or `NIE` (Polish for 'no') if no such a number exists.

If there are several correct answers, you can output any of them.

Example

standard input	standard output
177	123
42	NIE

Note

In Sample 1, computing the value of the encryption function on 123 gives $1+2+3+12+13+23+123 = 177$.

In Sample 2, there is no sequence whose encrypted value is 42.