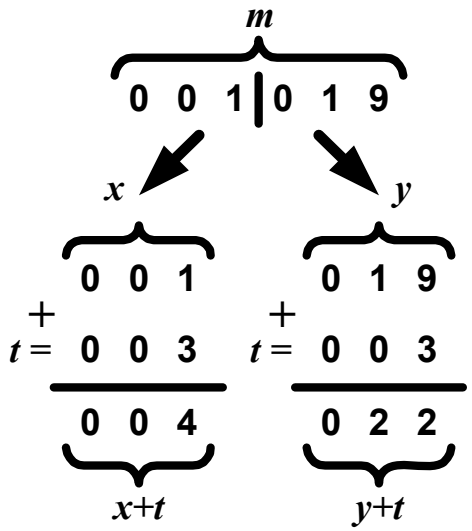
D. Lucky tickets (16 Mb, 1 sec)

The problems concerning lucky tickets are considered classic. Let us remind that a ticket is lucky if its number ***S*** satisfies certain conditions. Let the number of the ticket have ***m***=2****n*** digits. We consider a ticket to be lucky if the sum of the first ***n*** digits is equal to the sum of the last ***n*** digits. *If the number of a ticket does not meet this condition we call such a ticket unlucky.*

To turn an unlucky ticket into a lucky one, the following process is proposed:

1. denote the number formed by the first ***n*** digits as ***x***, and the number formed by the rest ***n*** digits as ***y***;
2. add a positive integer ***t*** to both ***x*** and ***y***; ***t*** is chosen so that the number of digits in ***(x+t)*** and ***(y+t)*** is still ***n***, and the sums of digits of the new numbers are equal;



Write a program that will calculate positive number ***t*** for given ticket number ***S***. Number ***t*** must turn an unlucky ticket into a lucky one according to the process above. If several such numbers exist then any of them will be the answer. If there are no such numbers then output -1 as the answer.

Limitations

$2 \le 2*n \le 100$;
$0 \le S \le 10^{2*n} - 1$

Input

The input file consists of a single line with number ***S*** (unlucky ticket number) having ***m***=2****n*** decimal digits.

Output

The output file contains a single integer ***t***. If no solution exists then the output file contains –1.

Sample Input 1	Sample Output 1
`001019`	`3`
Sample Input 2	**Sample Output 2**
`98`	`-1`
Sample Input 3	**Sample Output 3**
`654204`	`46`