G. New Year and Original Order

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Let $S(n)$ denote the number that represents the digits of n in sorted order. For example, $S(1) = 1, S(5) = 5, S(50394) = 3459, S(353535) = 333555$.

Given a number X, compute modulo $10^9 + 7$.

Input

The first line of input will contain the integer X ($1 \le X \le 10^{700}$).

Output

Print a single integer, the answer to the question.

Examples

input
21
output
195

input
345342
output
390548434

Note

The first few values of S are $1, 2, 3, 4, 5, 6, 7, 8, 9, 1, 11, 12, 13, 14, 15, 16, 17, 18, 19, 2, 12$. The sum of these values is 195.