Sam and substrings

Samantha and Sam are playing a numbers game. Given a number as a string, no leading zeros, determine the sum of all integer values of substrings of the string.

Given an integer as a string, sum all of its substrings cast as integers. As the number may become large, return the value modulo $10^9 + 7$.

Example
$n = \text{'42'}$

Here n is a string that has 3 integer substrings: 4, 2, and 42. Their sum is 48, and $48 \bmod (10^9 + 7) = 48$.

Function Description

Complete the *substrings* function in the editor below.

substrings has the following parameter(s):

- *string n:* the string representation of an integer

Returns

- *int:* the sum of the integer values of all substrings in n, modulo $10^9 + 7$

Input Format

A single line containing an integer as a string, without leading zeros.

Constraints

- $1 \leq ncastasaninteger \leq 2 \times 10^5$

Sample Input 0

```
16
```

Sample Output 0

```
23
```

Explanation 0

The substrings of `16` are `16, 1` and `6` which sum to `23`.

Sample Input 1

```
123
```

Sample Output 1

```
164
```

Explanation 1

The substrings of `123` are `1, 2, 3, 12, 23, 123` which sum to `164`.