

Rikka with Composite Number

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 512 megabytes

Rikka is a professional problem setter. Today, she is going to generate test cases for a problem about Composite Number.

To randomly generate composite numbers, Rikka starts from a non-empty subset D of digits $\{1, 2, \dots, 9\}$ and integer $c = 0$, and then generates in turns. In each turn:

1. Rikka selects a digit d from D uniformly at random, and then changes c to $c \times 10 + d$;
2. If c has already been a composite integer, Rikka takes c as the result. Otherwise, Rikka returns to Step 1 and starts a new turn.

The time cost of a generator is crucial. Therefore, Rikka wants you to calculate the expected number of the turns used by the generator to generate a composite number.

A positive integer n is a composite integer if and only if there exists an integer $k \in [2, n - 1]$ satisfying k is a factor of n .

Input

The first line contains a 01-string of length 9. The i -th character is 1 if and only if digit i is inside D .

The input guarantees that D is not empty.

Output

Output a single integer, representing the expected number of turns.

The answer is guaranteed to be a rational number. You are required to output the answer module 998244353. Formally, if the simplest fraction representation of the answer is $\frac{x}{y}$, you need to output $x \times y^{998244351} \bmod 998244353$.

Examples

standard input	standard output
100000000	3
001100000	499122178

Note

For the first sample, the generator must return 111 in the third turn.

For the second sample, there are 3 possibilities:

- Return 4 in the first turn, with probability $\frac{1}{2}$;
- Return 33 in the second turn, with probability $\frac{1}{4}$;
- Return 34 in the second turn, with probability $\frac{1}{4}$.

Therefore, the expected number of turns is $\frac{3}{2}$.