

## Problem E: Expression Sum

- Time Limit: 3 sec

### Problem Statement

You are given a string  $S$ . Each character in  $S$  is one of **0123456789 + ( ) ?**.  
Let  $T$  be a string formed by replacing each **?** in  $S$  with one of **0123456789 + ( )**. Define **eval( $T$ )** as follows:

- If  $T$  is a **valid expression**, then it is the value obtained by evaluating  $T$  as an expression.
- If  $T$  is not a **valid expression**, then it is **0**.

Compute the sum of **eval( $T$ )** for all possible ways to replace each **?** in  $S$  with one of **0123456789 + ( )**, and output the result modulo **998,244,353**.

A **valid expression** is defined by the following BNF:

```
<expression> ::= <expression> "+" <primary> | <primary>
<primary> ::= "(" <expression> ")" | <number>
<number> ::= <nonzero-digit> <number-sub> | <digit>
<number-sub> ::= <number-sub> <digit> | <digit>
<digit> ::= "0" | <nonzero-digit>
<nonzero-digit> ::= "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9"
```

### Input

The input is given in the following format:

- $S$
- $1 \leq |S| \leq 3,000$
  - Each character of  $S$  is one of **0123456789 + ( ) ?**.

### Output

Output the answer.

| Sample Input 1 | Sample Output 1 |
|----------------|-----------------|
| ?1?            | 46306           |
| Sample Input 2 | Sample Output 2 |
| 20???0+2??     | 651059511       |