Problem L. Long integer

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	256 megabytes

You are given the positive integer x_0 in the decimal notation, and q queries, the i-th of them can be one of two types:

- Add some given digit d_i to the right of the number, i.e. $x_i = \overline{x_{i-1}d_i}$.
- Cross out the rightmost digit from the number, i.e. $x_{i-1} = \overline{x_i e_i}$.

After each query, print the remainder of dividing x_i by $10^9 + 7$.

It is guaranteed that after each query the number will be positive ($x_i \geq 1$).

Input

The first line of the input file contains a single integer x_0.

The second line of the input file contains a single integer q.

The following q lines denote the queries.

If the i-th query is a query to add a digit, then the i-th line contains the character "+" (without quotes) and d_i.

If the i-th query is a query to cross out a digit, then the i-th line contains the character "-".

$$1 \leq x_0 < 10^{100\,000}$$

$$1 \leq q \leq 10^5$$

$$0 \leq d_i \leq 9$$

Output

After i-th query, print the remainder of dividing x_i by $10^9 + 7$.

Examples

standard input	standard output
123 3 + 5 + 1 -	1235 12351 1235
42 23 + 0 + 0 + 0 + 0 + 0 + 0 + 2 + 9 + 4 + 4 + 2 - - - - - - - - - - -	420 4200 42000 420000 4200000 42000000 420000002 200000001 0 4 42 4 0 200000001 420000002 42000000 4200000 420000 42000 4200 420 42 4