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CODEFORCES
Sponsored by **TON**

HOME   TOP   CATALOG   CONTESTS   GYM   PROBLEMSET   GROUPS   RATING   EDU   API   CALENDAR   HELP   RAYAN 🏆

PROBLEMS   SUBMIT CODE   MY SUBMISSIONS   STATUS   HACKS   ROOM   STANDINGS   CUSTOM INVOCATION

D. Anton and School - 2

time limit per test: 2 seconds
memory limit per test: 256 megabytes

As you probably know, Anton goes to school. One of the school subjects that Anton studies is Bracketology. On the Bracketology lessons students usually learn different sequences that consist of round brackets (characters "(" and ")" (without quotes)).

On the last lesson Anton learned about the regular simple bracket sequences (RSBS). A bracket sequence s of length n is an RSBS if the following conditions are met:

- It is not empty (that is $n \neq 0$).
- The length of the sequence is even.
- First $\frac{n}{2}$ characters of the sequence are equal to "(".
- Last $\frac{n}{2}$ characters of the sequence are equal to ")".

For example, the sequence "((()))" is an RSBS but the sequences "((())" and "(()())" are not RSBS.

Elena Ivanovna, Anton's teacher, gave him the following task as a homework. Given a bracket sequence s. Find the number of its distinct subsequences such that they are RSBS. Note that a subsequence of s is a string that can be obtained from s by deleting some of its elements. Two subsequences are considered distinct if distinct sets of positions are deleted.

Because the answer can be very big and Anton's teacher doesn't like big numbers, she asks Anton to find the answer modulo $10^9 + 7$.

Anton thought of this task for a very long time, but he still doesn't know how to solve it. Help Anton to solve this task and write a program that finds the answer for it!

Input
The only line of the input contains a string s — the bracket sequence given in Anton's homework. The string consists only of characters "(" and ")" (without quotes). It's guaranteed that the string is not empty and its length doesn't exceed $200\,000$.

Output
Output one number — the answer for the task modulo $10^9 + 7$.

Examples

input	Copy
)(()()	

output	Copy
6	

input	Copy
()()()	

output	Copy
7	

input	Copy
)))	

output	Copy

Codeforces Round 404 (Div. 2)

Finished

Practice

⭐

→ Virtual participation ⌄

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

[Start virtual contest]

→ Clone Contest to Mashup ⌄

You can clone this contest to a mashup.

[Clone Contest]

→ Submit?

Language: [GNU G++17 7.3.0 ⌄]

Choose file: [Choose File] No file chosen

[Submit]

→ Last submissions

Submission	Time	Verdict
293744597	Nov/29/2024 04:32	Wrong answer on test 4

→ Contest materials

- Announcement (en)   ✕
- Editorial (en)   ✕