

Problem I. The Interview Problem

Input file: *standard input*
Output file: *standard output*
Time limit: 1 second
Memory limit: 256 mebibytes

You are given a string s consisting of parentheses (“(” and “)”) and digits (“0” through “9”). From the string s , you construct another string t by considering every character of s in order and performing the following operations based on the character values:

- “(”: append “(” to t .
- “)”: append “)” to t .
- $0 \leq c \leq 9$: delete any c characters from t . It is guaranteed that it is always possible to do so. The deleted characters don’t need to be consecutive.

Is it possible to construct t to be a balanced bracket sequence?

Input

The first line contains an integer t ($1 \leq t \leq 10^4$), the number of test cases.

For each test case, you are given a non-empty string s consisting of parentheses and digits (“()0123456789”). The length of the string will be at most $3 \cdot 10^5$ characters.

It is guaranteed that the total length of the strings will not exceed $3 \cdot 10^5$ characters.

Output

For each test case, output “YES” if it is possible to construct t to be a balanced bracket sequence, and “NO” otherwise.

You may output each letter in any case (lowercase or uppercase). For example, the strings “yEs”, “yes”, “Yes”, and “YES” will be accepted as a positive answer.

Examples

<i>standard input</i>	<i>standard output</i>
2 ((() (3)1 (()1)	Yes No
5 ()1() () ()1(((2() ()))3)() (2)() ((1()))(1)()	No Yes Yes No Yes