The 37th Annual ACM
International Collegiate Programming Contest
Asia Regional – Daejeon
Nationwide Internet Competition

Problem G
Parenthesis

Parenthesis String (PS) consists of two parenthesis symbols '(' and ')' only. In parenthesis strings, some strings are called a *valid* PS (shortly, VPS). Let us give the formal definition of VPS. A single "( )" is a member of VPS, called the base VPS. Let x and y be a member of VPS. Then "(x)", a VPS which encloses a VPS x with a single pair of parenthesis, is also a member of VPS. And xy, the concatenation of two VPS x and y, is a member of VPS. For example, "(( )) ( )" and ((( )))" are all VPS, but "(( ) (", "(( )) ( )))" and "(( )" are not VPS. You are given a set of PS. You should decide if the input string is VPS or not.

Input
Your program is to read from standard input. The input consists of *T* test cases. The number of test cases *T* is given in the first line of the input. Then PS's are given in the following *T* lines one by one. The length of each PS is between 2 and 50, inclusively.

Output
Your program is to write to standard output. Print the result in each line. If the input string is a VPS, then print "YES". Otherwise print "NO".

The following shows sample input and output for 6 test cases.

Sample Input	Output for the Sample Input
6 (())()) (((()())() (()())((())) ((()()(()))(((())))() ()()()()(()()())() ((()((()))()(	NO NO YES NO YES NO