

876 Balanced Expressions

Let us consider expressions formed by nonnegative integers, the unary operator '-', the binary operators '+', '-', '*', and '/' and the symbols '(' and ')'.
Two expressions E and F are isomorphic if E can be obtained from F by replacing some nonnegative integers by others. The expressions $(2 + 3) * 6 - (-4)$ and $(7 + 0) * 6 - (-8)$ are isomorphic, but neither of them is isomorphic to $(-2 + 3) * 6 - (-4)$.

An expression E is balanced if every binary operation in it is applied to two isomorphic expressions. The expressions -5 , $(1 + 2) * (3 + 5)$ and $((-3)/(-4))/((-1)/(-100))$ are balanced, while $12 + (3 - 2)$ is not.

Given an expression E , check whether it is balanced.

Input

The input consists of several lines with the expressions to be tested, one per line.

Output

The output consists of a separated line for each expression with a single word, either 'YES' or 'NO'.

Sample Input

```
(1+2) * (3+5)
```

Sample Output

```
YES
```