For a positive integer $n$, let $S(n)$ be the string defined by the concatenation of the decimal notations (without leading zeroes!) of $1, 2, \ldots, n$. For instance, $S(11) = 1234567891011$.

An (arithmetic) formula $F$ is an *n-alternation* if it is built inserting in the string $S(n)$ arithmetic operators +, - and parentheses (,). Besides of that, it is required that the used arithmetic operators occur alternately in $F$.

An $n$-alternation, being an arithmetic formula, has an integer value. The following are two examples of 11-alternations with the indicated values:

$$\begin{aligned} 1-(2+3)-4+5-6+7-8+9-1+0-11 &= -13 \\ -1+2-3+4-5+6-7+89-1+011 &= 95 \end{aligned}$$

Let's consider the following puzzle: given two integers $n$ and $m$ ($n > 0$), decide if there exists an $n$-alternation $F$ that evaluates to $m$. From the examples above it is clear that it is possible to build 11-alternations that evaluate to $-13$ and 95. However, it is easy to see that it is impossible to find a 3-alternation that evaluates to 10.

In order to be precise in the description of the required task, an (arithmetic) *formula* is defined as follows:

- The empty string is not a formula.
- A numeric string, i.e., a string made of digits `0` ... `9`, with at most 5 of them, is a formula.
- If $\alpha$ and $\beta$ are formulae, then $\alpha + \beta$ and $\alpha - \beta$ are formulae.
- If $\alpha$ is a formula, then $+\alpha$, $-\alpha$ and $(\alpha)$ are formulae.

## Input

The input consists of several test cases, each one defined by a line containing two blank-separated integers $n$ and $m$ ($1 \le n \le 100$, $-10^7 \le m \le 10^7$).

## Output

For each test case, print a line with the character '`Y`' if there exists an $n$-alternation $F$ that evaluates to $m$, or with the character '`N`', otherwise.

## Sample Input

```
11 -13
11 95
3 10
```

## Sample Output

```
Y
Y
N
```