

Tammy's Triangle Numbers

Given a non-negative integer n , the n th *triangle number* is the sum of all the non-negative integers less than or equal to n . The 0th triangle number is the empty sum 0, the first triangle number is 1, the second is $1 + 2 = 3$, the third is $1 + 2 + 3 = 6$, and so on. Here is the beginning of the infinite sequence of triangle numbers:

0, 1, 3, 6, 10, 15, 21, 28, 36, 45, 55, 66, 78, 91, 105, 120, 136, 153, ...

These are called triangle numbers because you can construct an equilateral triangle if you are given a number of objects that is a triangle number. For example, in the USA bowling pins are set up in a triangle of 10 pins. This works because 10 is the 4th triangle number. The resulting triangle also has 4 rows:

```
  *
 * *
* * *
* * * *
```

Tammy, who loves triangles, has recently discovered the joy of triangle numbers, and she has been playing around with fun ways to represent them. She likes to draw triangles using the digits from the sequence of triangle numbers:

```
  0
 1 3
6 1 0
1 5 2 1
```

The triangle above represents the 4th triangle number (since there are 10 digits) and it uses the digits from the 0th through the 6th triangle numbers (0, 1, 3, 6, 10, 15, and 21) going row by row from left to right. This does not work out so neatly for all of the triangle numbers though. For example, here is an attempt to represent the 5th triangle number using the same method:

```
  0
 1 3
6 1 0
1 5 2 1
2 8 3 6 4
```

Notice that the 4 from the 9th triangle number 45 fits in this triangle, but the 5 does not.

Tammy wants to know, given a non-negative integer n , can we represent the n th triangle number using the digits from the triangle number sequence in order, and end with a digit that is the last digit of a triangle number? If so, which triangle number's final digit do we end with?

Your program will be given a single non-negative integer $n \leq 1000$ on a single line via standard input, and your program should print a single line of output which either contains No if it is not possible to neatly construct a triangle for the n th triangle number in this manner, or the non-negative integer m , where the last digit of the m th triangle number ends up in the bottom right corner in the representation of the n th triangle number described above.

Example 1

The following is a sample input for this problem:

4

The following is the correct output for the input above:

6

Example 2

The following is a sample input for this problem:

5

The following is the correct output for the input above:

No