# Counting Pascal

Pascal's triangle is a common figure in combinatorics. It is a triangle formed by rows of integers. The top row contains a single 1. Each new row has one element more than the previous one and is formed as follows: the leftmost and rightmost values are 1, while each of the other values is the sum of the two values above it. Here we depict the first 7 rows of the triangle.

```
              1
            1   1
          1   2   1
        1   3   3   1
      1   4   6   4   1
    1   5   10   10   5   1
  1   6   15   20   15   6   1
```

Pascal's triangle is infinite, of course, and contains the value 1 an unbounded number of times. However, any other value appears a finite number of times in the triangle. In this problem you are given an integer $K \geq 2$. Your task is to calculate the number of values in the triangle that are different from 1 and less than or equal to K.

## Input

The input contains several test cases. Each test case is described in a single line that contains an integer K ($2 \leq K \leq 10^9$). The last line of the input contains a single –1 and should not be processed as a test case.

## Output

For each test case output a single line with an integer indicating the number of values in Pascal's triangle that are different from 1 and less than or equal to K.

## Example

**Input:**
2
6
-1

**Output:**
1
10