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**Group A**

**Task A3. PRODUCTS**

Let  $n$  be a positive integer. George wrote a program which finds positive integers  $a_1, a_2, \dots, a_k$ , which product increases  $n$  times if we add 1 to each of them, i.d.

$$(a_1 + 1)(a_2 + 1) \dots (a_k + 1) = n a_1 a_2 \dots a_k .$$

Now, however, he wants to find out what's the smallest value of  $k$ , for which this is possible. Write a program `mink`, which solves the George's new task.

**Input**

From the first line of the standard input it is given  $n$  ( $2 < n < 1000$ ).

**Output**

On a line of the standard output the program must write the searched value of  $k$ .

**EXAMPLE**

**Input**

4

**Output**

2