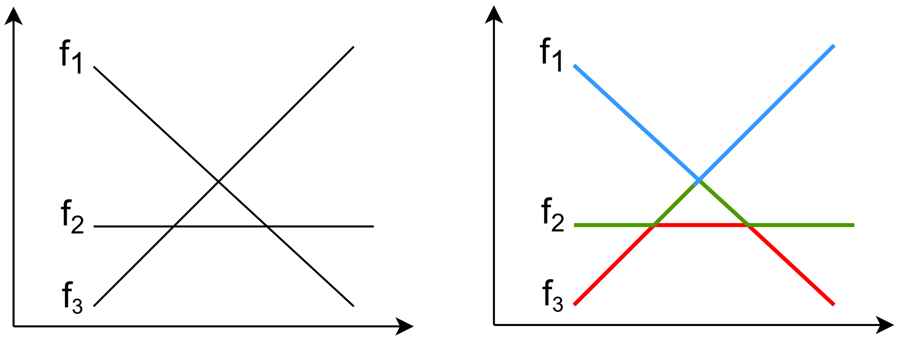
Hard Functions

Description

There are n continuous functions $f_i(x), 1 \le i \le n$. For any two distinct functions $f_i(x)$ and $f_j(x), i \ne j$, there exists **exactly one** value of x such that $f_i(x) = f_j(x)$ and an infinite number of values of x such that $f_i(x) < f_j(x)$. For any different i, j, k, there is no x such that $f_i(x) = f_j(x) = f_k(x)$.



The left figure shows three functions satisfying the conditions, where the lines from top to bottom are f_1, f_2, and f_3, respectively.

As shown on the right, we recolor the function image. The red part is the lowest layer of this whole function image, which we call the first layer. Analogously, the green part is called the second layer and the blue part is called the third layer. Notice that the first layer is divided into f_3 on the left, f_2 in the middle, and f_1 at the end, while the second layer is divided into f_2 on the left, f_3 on the next, f_1 on the next, and f_2 at the end, so we say that the first layer is divided into three segments and the second layer is divided into four segments. Similarly, the third layer is divided into only two segments.

Find the **minimum number** of segments that the k-th layer can consist of for the n functions that satisfy the above conditions.

Input Format

One line, containing two integers, n, k.

Output Format

One integer, which is the answer.

Sample

Sample Input

```
1 1
```

Sample Output

```
1
```

For 40% testcases:

- $1 \le k \le n \le 5$

For 100% testcases:

- $1 \le k \le n \le 10^9$