Project Euler #53: Combinatoric selections

This problem is a programming version of Problem 53 from projecteuler.net

There are exactly ten ways of selecting three from five, 12345:

$$123, 124, 125, 134, 135, 145, 234, 235, 245, \text{ and } 345$$

In combinatorics, we use the notation, $^5C_3 = 10$

In general,

$$^nC_r = \frac{n!}{r! \times (n-r)!}, \text{ where } r \le n, n! = n \times n-1 \times n-2 \times \cdots 3 \times 2 \times 1 \text{ and } 0! = 1$$

It is not until $n = 23$, that a value exceeds one-million:

$$^{23}C_{10} = 1144066$$

How many, not necessarily distinct, values of ^nC_r, for $1 \le n \le N$, are greater than K?

Input Format

Input contains two integers N and K.

Constraints

$2 \le N \le 1000$
$1 \le K \le 10^{18}$

Output Format

Print the answer corresponding to the test case.

Sample Input

```
23 1000000
```

Sample Output

```
4
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