

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, ${}^nC_r = \frac{n!}{r! \times (n-r)!}$, where $r \leq n$, $n! = n \times n-1 \times n-2 \times \dots \times 2 \times 1$ 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 $1 \leq n \leq N$, are greater than K ?

Input Format

Input contains two integers N and K .

Output Format

Print the answer corresponding to the test case.

Constraints

$$2 \leq N \leq 1000$$

$$1 \leq K \leq 10^{18}$$

Sample Input

23 1000000

Sample Output

4