

Problem J. Dyscalculia

Time limit 2000 ms
Mem limit 524288 kB
OS Windows

KaitoKid is, obviously, a kid. He's interested in mathematics despite his young age. Today, he was trying to count.

KaitoKid starts counting from one. At the first second, he always says one. At each of the next seconds, he either says the next number of the one he said the second before, or gets lost and starts counting from one again.

More formally, KaitoKid will count for n seconds. At each second i he says the number a_i where:

- If $i = 1$, $a_i = 1$.
- Otherwise, $a_i = 1$ or $a_i = a_{i-1} + 1$

As a grandmaster at a young age, that looked so easy to do, so he decided to find the sum of the sum of the k lexicographically smallest arrays he could possibly say, modulo $10^9 + 7$

Input

The first line of the input contains two space-separated integer numbers n and k ($1 \leq n \leq 10^5$), ($1 \leq k \leq 10^9$)

It is guaranteed that k is always less than or equal to the number of possible arrays

Output

Output a single integer number. The sum of the sum of the k lexicographically smallest arrays he could possibly say modulo $10^9 + 7$

Sample 1

Input	Output
3 3	11

Note

As $n = 3$, the possible arrays he can say in lexicographical order are:

- 1 1 1
- 1 1 2

- 1 2 1
- 1 2 3

Their sums are 3, 4, 4, 6, respectively. The sum of the lexicographically smallest 3 is $3 + 4 + 4 = 11$, Hence, the answer is 11