

Problem D. Different Summands Counting

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 256 mebibytes

Consider all ordered partitions of a positive integer n into m positive summands: $n = a_1 + a_2 + \dots + a_m$. Let $f(a_1, a_2, \dots, a_m)$ be the number of different integers among a_1, a_2, \dots, a_m . Find the sum of $f(a_1, a_2, \dots, a_m)$ over all ordered partitions of the number n , and print it modulo 998 244 353.

Two ordered partitions $a_1 + a_2 + \dots + a_m = n$ and $b_1 + b_2 + \dots + b_m = n$ are considered different if there is an index $i \in \{1, 2, \dots, m\}$ such that $a_i \neq b_i$.

Input

The only line of input contains two integers n and m ($1 \leq n \leq 10^{18}$, $1 \leq m \leq 500$, $m \leq n$).

Output

Print the answer modulo 998 244 353.

Examples

standard input	standard output
10 2	17
20 4	3413