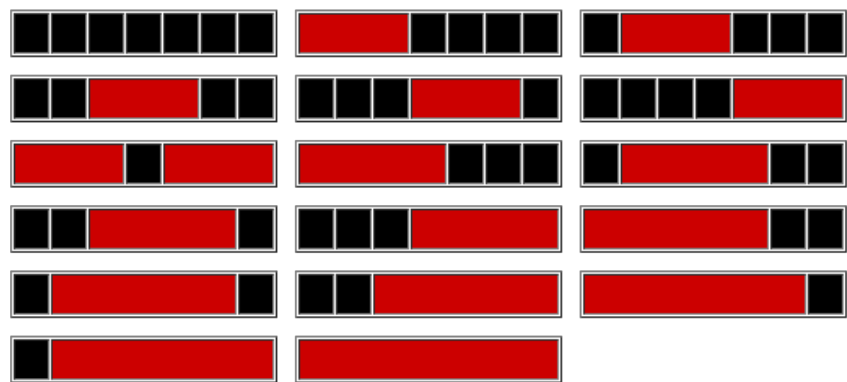


# Project Euler #114: Counting block combinations I

This problem is a programming version of [Problem 114](#) from [projecteuler.net](#)

A row measuring  $n$  units in length has red blocks with a minimum length of  $m$  units placed on it, such that any two red blocks (which are allowed to be different lengths) are separated by at least one black square. There are exactly seventeen ways of doing this for  $n = 7$  and  $m = 3$ .



How many ways can a row measuring  $n$  units in length be filled? As the answer can be extremely large, print it modulo  $10^9 + 7$ .

**NOTE:** Although the example above does not lend itself to the possibility, in general it is permitted to mix block sizes. For example, on a row measuring eight units in length (and  $m = 3$ ) you could use red ( $3$ ), black ( $1$ ), and red ( $4$ ).

## Input Format

The input contains two space separated integers  $n$  and  $m$ .

## Constraints

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

$1 \leq m \leq 70$

## Output Format

Print one integer - the answer to a problem modulo  $10^9 + 7$ .

## Sample Input

7 3

## Sample Output

17