



## Boring Bits

Thomas recently started learning programming and he found binary numbers so simple and powerful. However, he is just too smart so he has a solid grasp of the fundamentals quickly. He soon feels bored and come up with his own problems to practice.

He wonders, how many binary numbers having  $N$  bits with maximum  $K$  bits '0' in a row?

For example:

Given  $N = 3$ ,  $K = 2$ : there are 7 numbers satisfied Thomas' condition.

Consider the following explanation:

000

001

010

011

100

101

110

111

## Input

Given 2 numbers:

$N$ : the length of binary number. ( $1 \leq N \leq 10^9$ )

$K$ : the maximum number of bit '0' in the condition. ( $1 \leq K \leq 40$ )

## Output

A single integer - the answer to the problem modulo 666777.

## Examples

Standard Input	Standard Output
3 2	7
4 2	13