D. Almost Identity Permutations

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

A permutation p of size n is an array such that every integer from 1 to n occurs exactly once in this array.

Let's call a permutation an *almost identity permutation* iff there exist at least n - k indices i ($1 \le i \le n$) such that $p_i = i$.

Your task is to count the number of *almost identity* permutations for given numbers n and k.

Input

The first line contains two integers n and k ($4 \le n \le 1000$, $1 \le k \le 4$).

Output

Print the number of *almost identity* permutations for given n and k.

Examples

input
4 1
output
1

input
4 2
output
7

input
5 3
output
31

input
5 4
output
76