

Task 1. Sequences

Write program **sequences** to count the number of all non-decreasing sequences of length n containing integers from 1 to m , where every element can occur at most k times.

Input

On the standard input, there are given integers n , m and k , separated by spaces.

Output

On the standard output, your program has to print the count of the described sequences.

Constraints:

$0 < n < 31, 0 < m < 31, 0 < k < 31$.

Example

Input

3 4 2

Output

16

Explanation. The sequences are: (1,1,2), (1,1,3), (1,1,4), (1,2,2), (1,2,3), (1,2,4), (1,3,3), (1,3,4), (1,4,4), (2,2,3), (2,2,4), (2,3,3), (2,3,4), (2,4,4), (3,3,4), (3,4,4).