

Bar-Code

Time limit: 1 sec

A barcode consists of black and white vertical lines in different arrangement. For simplicity, we use a string of "0" and "1" to identify a barcode such that "0" represents a black line while "1" represents a white line. For example, 0100011 represents the barcode in fig. 1.



Fig. 1: Barcode example

A barcode is designed to be robust to error thus it has to follow some specific rules:

- 1) A barcode must consists of exactly **N** lines
- 2) There can be no more than **M** consecutive lines of same color. For example, when **M=3**, the barcode "01100001" is illegal because it consists of four consecutive white lines. However, 1001100 is legal.
- 3) We define "color changing" as follows. Color changing occurs when two consecutive lines have different colors. For example, 1001100 has 3 color changing. A barcode must have exactly **K** color changing.
- 4) The first line is always a black line.

We interest in knowing the number of possible barcode with respect to given values of **N**, **M** and **K**.

Input

There are only one line contains 3 integers **N**, **M** and **K** where $1 \leq \mathbf{N}, \mathbf{M} \leq 30$ and $0 \leq \mathbf{K} \leq 30$

Output

The output must contain exactly one line giving the number of possible barcodes.

Example

Input	Output
4 3 1	3
5 2 2	3
7 9 4	15