Softuniada 2019

Rooks

On a rectangular chess board with **X rows** and **Y columns**, **N rooks** should be placed in such a way, so that **each** of **them** is **attacked** by **at most 1** other **rook**. One rook is attacked by another rook, if they are placed on the **same row**, or on the **same column**, and there are **no other rooks between** them.

Write a program, which finds the **count** of **all possible ways** that these N rooks **can be placed** on the X / Y chess board, so that they **cover** the **conditions specified above**. Due to the fact, that the answer may be a **very big number**, always **print** the **remainder** of the **division** of the **actual count** with **1,000,001**.

Input

The input consists of 3 input lines:

- On the first line you will receive **X** – the **rows** of the chessboard
- On the second line you will receive **Y** – the **columns** of the chessboard
- On the third line you will receive **N** – the **count** of **rooks** that should be placed on the chessboard
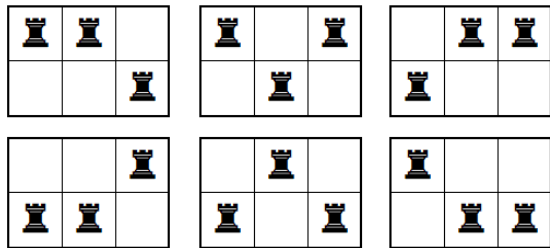
Output

The output should consist of a **single line**, containing the **remainder** of the **division** of the **desired count**, with **1,000,001**.

Constraints

- **X**, **Y** and **N** will be integers in **range [1, 100]**.
- Allowed working time / memory: to be defined.

Examples

Input	Output	Comment
4 6 2	276	There are only 2 rooks here and all ways they can be placed are valid. The answer is: (4 * 6) * (4 * 6 - 1) / 2 = 276.
2 3 3	6	
1 100 3	0	We cannot place 3 rooks on one row.
9 6 10	340200	

98 99 100	951454	The actual count is: 47716292659965237869320265557301253064912097095671321541359391563983349799122665140807253019080511522871444179307786903481024995730822967772318401645588816349376996893446146550968847695872000000000000000000000000