

## E. Games with Rectangle

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

In this task Anna and Maria play the following game. Initially they have a checkered piece of paper with a painted  $n \times m$  rectangle (only the border, no filling). Anna and Maria move in turns and Anna starts. During each move one should paint inside the last-painted rectangle a new lesser rectangle (along the grid lines). The new rectangle should have no common points with the previous one. Note that when we paint a rectangle, we always paint only the border, the rectangles aren't filled.

Nobody wins the game — Anna and Maria simply play until they have done  $k$  moves in total. Count the number of different ways to play this game.

### Input

The first and only line contains three integers:  $n, m, k$  ( $1 \leq n, m, k \leq 1000$ ).

### Output

Print the single number — the number of the ways to play the game. As this number can be very big, print the value modulo 1000000007 ( $10^9 + 7$ ).

### Examples

input
3 3 1
output
1
input
4 4 1
output
9
input
6 7 2
output
75

### Note

Two ways to play the game are considered different if the final pictures are different. In other words, if one way contains a rectangle that is not contained in the other way.

In the first sample Anna, who performs her first and only move, has only one possible action plan — insert a  $1 \times 1$  square inside the given  $3 \times 3$  square.

In the second sample Anna has as much as 9 variants: 4 ways to paint a  $1 \times 1$  square, 2 ways to insert a  $1 \times 2$  rectangle vertically, 2 more ways to insert it horizontally and one more way is to insert a  $2 \times 2$  square.