

Sherlock and the Maze

Watson gives a 2-D grid to Sherlock. Rows are numbered 1 to N from top to bottom and columns are numbered 1 to M from left to right. Sherlock is at position $(1,1)$ right now and he is free to face any direction before he starts to move. He needs to reach (N,M) . In one step, he can either move downwards or rightwards. Also, he cannot make more than K turns during his whole journey.

There are two possible scenarios when a turn can occur at point (i, j) :

```
Turns Right: (i-1, j)  ->  (i, j)  ->  (i, j+1)
               Down           Right

Turns Down:   (i, j-1) ->  (i, j)  ->  (i+1, j)
               Right        Down
```

Given N, M and K , help him by printing the number of ways to reach (N,M) with at most K turns. As this value can be very large, print the answer modulo $(10^9 + 7)$.

Input

First line contains T , the number of testcases. Then T lines follow, where each line represents a test case. Each testcase consists of three space separated integers, $N\ M\ K$, where (N, M) is the final location and K is the maximum number of allowed turns.

Output

For each testcase, print the required answer in one line.

Constraints

- $1 \leq T \leq 10$
- $1 \leq N, M \leq 100$
- $0 \leq K \leq 100$

Note

- He can take **at most** K turns.
- He is free to face any direction before starting from $(1, 1)$.

Sample Input

```
3
2 2 3
2 3 1
4 4 4
```

Sample Output

```
2
2
```

Sample explanation

Test Case #00: There is no way to reach $(2, 2)$ with 0, 2 or 3 turns. He will always reach $(2, 2)$ with 1 turn only. There are two ways shown below:

1. He starts from $(1, 1)$ facing right and moves to $(1, 2)$. Then he faces down and moves to $(2, 2)$.
2. He starts from $(1, 1)$ facing down and moves to $(2, 1)$. Then he turns right and moves to $(2, 2)$.

Test Case #01: He can't reach $(2, 3)$ with 0 turns. There are only two ways to reach $(2, 3)$ with exactly 1 turn.

1. He starts from $(1, 1)$ facing down and moves to $(2, 1)$. Then he turns right and takes two steps forward to reach $(2, 3)$.
2. He starts from $(1, 1)$ facing right and moves two steps forward to reach $(1, 3)$. Then he turns down and proceeds one step to $(2, 3)$.

Test Case #02: There are 0 ways with 0 turn, 2 ways with 1 turn, 4 ways with 2 turns, 8 ways with 3 turns and 4 ways with 4 turns to reach $(4, 4)$.

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