Tile Stacking Problem

Harvey came up with an interesting problem about *stable towers*. A stable tower of height n is a tower consisting of exactly n tiles of unit height stacked vertically in such a way, that no bigger tile is placed on a smaller tile.

Harvey gave Mike an infinite number of tiles of sizes $1, 2, \ldots, m$. He asked him to calculate the number of different *stable towers* of height n that can be built from these tiles, with a restriction that he can use at most k tiles of each size in the tower.

Since the number of different *stable towers* can be huge, output this number modulo $10^9 + 7$.

Note: Two towers of height n are different if and only if there exists a height h ($1 \le h \le n$), such that the towers have tiles of different sizes at height h.

Input Format

The first line contains 3 space-separated integers, n, m and k.

Constraints

- $1 \le n \le 10000$
- $1 \le m \le 1000$
- $1 \le k \le 5000$

Output Format

Print a single integer denoting the number of different *stable towers* of height n that can be built preserving the requirements given in the statement. Since this number can be huge, print it modulo $10^9 + 7$.

Sample Input 0

```
3 3 1
```

Sample Output 0

```
1
```

Explanation 0

Possible sequences: $\{1, 2, 3\}$ Hence answer is 1.

Sample Input 1

```
3 3 2
```

Sample Output 1

```
7
```

Explanation 1

Possible sequences: $\{1,1,2\},\{1,1,3\},\{1,2,2\},\{1,2,3\},\{1,3,3\},\{2,2,3\},\{2,3,3\}$. Hence answer is $\mathbf{7}$.