Path

There is a graph of N vertices, initially empty. Mateusz is loitering around, starting from vertex 1. He will go through vertices V_1, V_2, ..., V_M, and each time add a **directed** edge between two vertices he traversed (adding M edges overall). He cares about making the world a better place, therefore he wonders if it will be possible to reach all the vertices starting from an arbitrary one (in other words, whether the graph will be strongly connected). Mateusz is a businessman and daydreamer, but not a computer scientist, so you have to help him instead. How many paths V_1, V_2, ..., V_M lead to satisfying his goals? Since the result can be quite large, output it modulo $10^9 + 7$.

Constraints

- $2 \leq N \leq 300$

- $1 \leq M \leq 300$

- Both N, M are integers.

- Two consecutive vertices visited by Mateusz are **not** necessarily distinct.

Input

N M

Output

Print the number of sequences satisfying the condition, modulo $10^9 + 7$.

Examples

Input	Output
3 3	2
150 300	734286322
300 150	0

In the first sample testcase, only the paths (2,3,1) and (3,2,1) satisfy the constraints.

Scoring

The task does not have subtasks. Go all-in!