Given n orders, each order consists of a pickup and a delivery service.

Count all valid pickup/delivery possible sequences such that delivery(i) is always after of pickup(i).

Since the answer may be too large, return it modulo 10^9 + 7.

**Example 1:**

Input: n = 1  
Output: 1  
Explanation: Unique order (P1, D1), Delivery 1 always is after of Pickup 1.

**Example 2:**

Input: n = 2  
Output: 6  
Explanation: All possible orders:   
(P1,P2,D1,D2), (P1,P2,D2,D1), (P1,D1,P2,D2), (P2,P1,D1,D2), (P2,P1,D2,D1) and (P2,D2,P1,D1).  
This is an invalid order (P1,D2,P2,D1) because Pickup 2 is after of Delivery 2.

**Example 3:**

Input: n = 3  
Output: 90

**Constraints:**

* 1 <= n <= 500