n passengers board an airplane with exactly n seats. The first passenger has lost the ticket and picks a seat randomly. But after that, the rest of passengers will:

* Take their own seat if it is still available,
* Pick other seats randomly when they find their seat occupied

What is the probability that the n-th person can get his own seat?

**Example 1:**

**Input:** n = 1

**Output:** 1.00000

**Explanation:** The first person can only get the first seat.

**Example 2:**

**Input:** n = 2

**Output:** 0.50000

**Explanation:** The second person has a probability of 0.5 to get the second seat (when first person gets the first seat).