

Scooter numbers

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 512 megabytes

Residents of Partoburg often violate traffic rules, get into accidents involving scooters, and steal other people's scooters. In order to control scooter-related incidents, the sheriff of Partoburg has introduced a scooter registration system.

On the first day of each month the sheriff chooses a natural number n and prints all possible scooter numbers in the format $[a_1 + a_2 + \dots + a_k]$, where $a_1 + a_2 + \dots + a_k = n$, and natural numbers a_i are ordered non-decreasingly: $a_1 \leq a_2 \leq \dots \leq a_k$. Each number is unique: there cannot be two scooters with the same number. The numbers are assigned to scooter owners. If an owner does not have a number in a given month, he cannot use the scooter during that month.

The sheriff himself also moves around on a scooter. To easily identify his scooter, it has a special number format. The sheriff's scooter number is a single number calculated as follows. For all scooter numbers in the current month $[a_1 + a_2 + \dots + a_k]$, the value $\text{mex}a_1, a_2, \dots, a_k$ is calculated — the minimum natural number absent in the number. These values are summed. The number of the sheriff's scooter is a remainder of the division of the resulting sum by $10^9 + 7$.

The sheriff wants to automate the scooter number assignment system and started with his own scooter. This month he chose the number n . Help determine what number his scooter will receive.

Input

In the first line of input is a single natural number n — the number chosen by the sheriff for this month ($1 \leq n \leq 1000$).

Output

Output a single integer — the sheriff's scooter number: an integer from 0 to $10^9 + 6$, the remainder of the division by $10^9 + 7$ of the sum of all the scooter numbers' mex values for this month.

Examples

standard input	standard output
1	2
3	6

Note

In the first example $n = 1$. The only possible number is $[1]$. In this case the sheriff's scooter number will be $\text{mex}1 = 2$.

In the second example $n = 3$. All possible numbers are $[1 + 1 + 1]$, $[1 + 2]$, $[3]$. In this case the sheriff's scooter number will be $\text{mex}1, 1, 1 + \text{mex}1, 2 + \text{mex}3 = 2 + 3 + 1 = 6$.