Problem J. Product of factorials

Time Limit	1000 ms
Mem Limit	1572864 kB
Code Length Limit	50000 B
OS	Linux

You need to find the product of first n factorials 1! * 2! * ... * n! modulo 109546051211.

Input

One integer n (1 <= n <= 10000000)

Output

The answer.

Example

Input	Output
5	34560