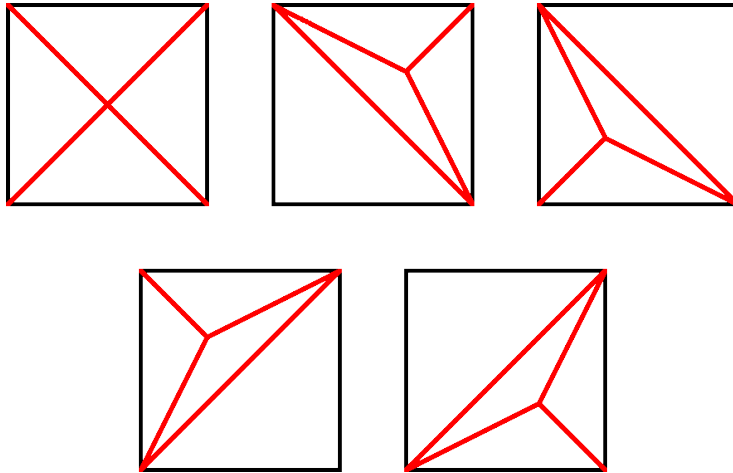


Problem B

Determine the number of triangulations of a convex n -gon together with one point placed inside. The edges of the triangulation must be straight, but the point can be placed anywhere inside the n -gon. Two triangulations that differ only by the position of the internal point are considered the same. E.g., the following picture shows all possible triangulations for $n = 4$.



Input and output

The input consists of a single line containing an integer n ($3 \leq n \leq 10^6$). Output a single integer, the number of triangulations modulo $10^9 + 7$.

Example

Input:

4

Output:

5