Big team formation

Coach has *n* players. A team is a subset of players and has at least two players - a captain and a keeper. How many ways can a coach form a team from *n* players?

Input

Each line of input contains one random integer number $2 \leq n \leq 10^{30}$. Input terminates with 0 (zero).

Output

For each *n* print your answer modulo *1 000 000 007* on new line.

Example

Input:
2
3
0

Output:
2
12