

# SUBSET 3

Given an integer  $N$ . Count the number of ways numbers  $1, 2, \dots, n$  can be divided into two sets of equal sum.

For example, if  $n=7$ , there are four solutions:

- $\{1,3,4,6\}$  and  $\{2,5,7\}$
- $\{1,2,5,6\}$  and  $\{3,4,7\}$
- $\{1,2,4,7\}$  and  $\{3,5,6\}$
- $\{1,6,7\}$  and  $\{2,3,4,5\}$

## Input

The only input line contains an integer  $n$  ( $1 \leq n \leq 500$ )

## Output

Print the answer modulo  $10^9+7$ .

## Sample

| Input | Output |
|-------|--------|
| 7     | 4      |