Golf Course (125 points)

Introduction

One of the golf courses in St. Andrews is trialling a new system of automated cars. A car's computer breaks the course down in sections and can move from one section to another. This particular golf course was split into sections in this way:

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1  2  3

4  5  6

7  8  9

   0
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However due to a small bug in the software, a car can only move in an L shapes (e.g. 1 step horizontally, 2 steps vertically) for example, from 1 to 8, or from 1 to 6, or from 4 to 0. On this course, answer the question how many unique paths are there for a car to get from 1 to 9 in exactly N moves. A move - one trip of a car from one section to another (for example a move is going from 1 to 6, regardless of the exact sections passed on the way). Unique path - a path which is different from others in at least one move. Example of a path from 1 to 9 in 10 moves is - 1 6 1 6 1 6 1 6 7 2 9. Another example - 1 6 1 6 1 6 7 2 7 2 9.

Input Specifications

One number - N. Number of moves that the car has to make to reach from 1 to 9

Output Specifications

A single number - number of possible unique paths

Sample Input/Output

Input

4

Output

3

Explanation

3 paths: 1-6-0-4-9, 1-8-3-4-9, 1-6-7-2-9