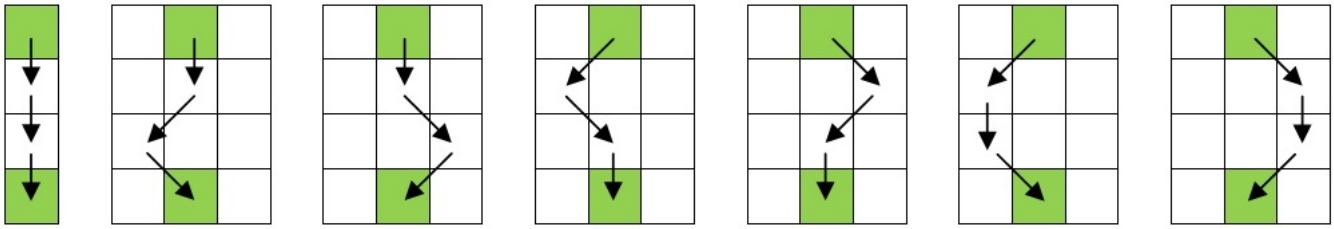
F - Go for a Different Road!

I will walk this long road, this so long road,
until the end, to the end of my heart,
I will walk this long, long, long road...
Mahmud Darwish

Context

Pedrito is distrustful by nature. He is obsessive compulsive, and believes that someone follows him every time he moves from the bank to his house. That is why he tries to change the path every day, but always without losing time, going through the minimum paths.

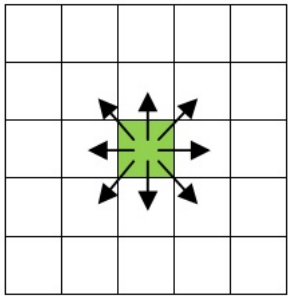
The map of Pedrito's city is like a square grid. You can go from the bank to the house in a straight line, moving a cell in each step. But you can also walk diagonally in one step. For example, if the distance from the house to the bank is 3, there are 7 alternatives to go to his house in the minimum number of steps:



Help Pedrito count the number of minimum paths to get to his house!

The Problem

We have a two-dimensional square grid of infinite size. There is a departure cell and an arrival cell, located in the same column, at a distance d, $1 \leq d \leq 40$. Valid movements are from one cell to another contiguous cell, as you can see in the following figure.



You have to calculate the number of different minimum paths (that is, those that need the minimum number of steps) to go from the initial cell to the final cell.

The Input

The first line of the input contains an integer, t, indicating the number of test cases.

For each test case, there is a line with one number indicating the distance d between the initial cell and the final cell, $1 \leq d \leq 40$.

The Output

For each test case, the output should consist of one line showing the number of different minimum paths between the initial cell and the final cell.

Sample Input

```
3
1
2
3
```

Sample Output

```
1
3
7
```

OMP'18
Facultad de Informática
Universidad de Murcia