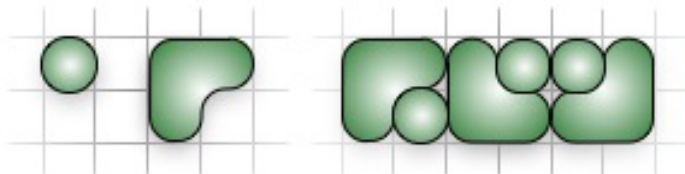


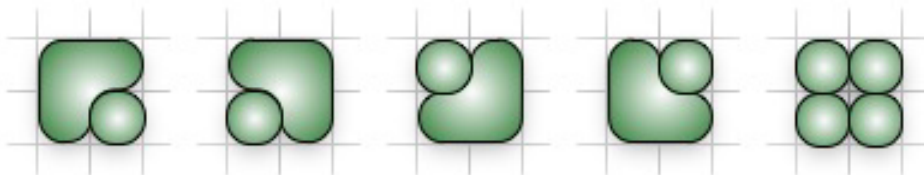
Wolfgang Puck has two very peculiar habits:

- I. He only makes two shapes of cakes. One is square and has an area of one unit. The other is L-shaped and has an area of three units.
- II. He will only deliver cakes packed in very specific box sizes. The boxes are always 2 units wide and are of varying length.

One day Wolfgang wondered in how many different ways he can pack his cakes into certain sized boxes. Can you help him?



The precise sizes of the cakes Wolfgang makes and one way to pack them in a box of length 6.



The five ways to pack a box of length 2.

Input

The input begins with t , the number of different box lengths. The following t lines contain an integer n ($1 \leq n \leq 40$).

Output

For each n output on a separate line the number of different ways to pack a 2-by- n box with cakes described above. Output is guaranteed to be less than 10^{18} .

Sample Input

```
2
1
2
```

Sample Output

```
1
5
```