

In this problem you will have to find in how many ways n letters can be bracketed so that the bracketing is non-binary bracketing. For example 4 letters have 11 possible bracketing:

$xxxx, (xx)xx, x(xx)x, xx(xx), (xxx)x, x(xxx), ((xx)x)x, (x(xx))x, (xx)(xx), x((xx)x), x(x(xx))$

Of these the first six bracketing are not binary. Given the number of letters you will have to find the total number of non-binary bracketing.

Input

The input file contains several lines of input. Each line contains a single integer n ($0 < n \leq 26$). Input is terminated by end of file.

Output

For each line of input produce one line of output which denotes the number of non binary bracketing with n letters.

Sample Input

3
4
5
10

Sample Output

1
6
31
98187