As any minimally superstitious person knows all too well, terrible things will happen when four persons do a crossed handshake.

You, an intrepid computer scientist, are given the task of easing the burden of these people by providing them with the feasible set of handshakes that include everyone in the group while avoiding any such crossings. The following figure illustrates the case for 3 pairs of persons:
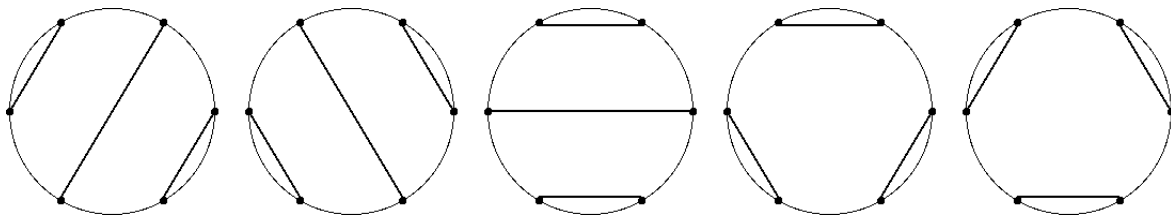
Input

The input to this problem contains several datasets separated by a blank line. Each dataset is simply an integer n, the number of **pairs** of people in the group, with $1 \leq n \leq 10$.

Output

The output is equally simple. For each dataset, print a single integer indicating the number of possible crossless handshakes that involve everyone in a group with n pairs of people. Print a blank line between datasets.

Sample Input

```
4
```

Sample Output

```
14
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