Mock CCO '19 Contest 1 Problem 4 - A Chemistry Problem

Time limit: 0.6s **Memory limit:** 162M

A circle is drawn with center at O and N points p_1 through p_N are equally spaced around the circle.

Line segments are drawn to connect O to each of these N points.

Compute the number of ways to delete N of the line segments or arcs such that the $N+1$ points are still connected.

Constraints

$1 \leq N \leq 100$

In test data worth 10% of marks, you may assume $N \leq 10$.

Input Specification

The first and only line contains a single positive integer, N.

Output Specification

Output the number of desired configurations.

Sample Input

```
3
```

Sample Output

```
16
```