## Bonus Problem – Catalan Numbers

[Catalan numbers](http://en.wikipedia.org/wiki/Catalan_number) form a sequence of natural numbers that occur in various counting problems, often involving recursively defined objects. The formula for calculating the **n-th** number is:

C_n = \frac{1}{n+1}{2n\choose n} = \frac{(2n)!}{(n+1)!\,n!} = \prod\limits_{k=2}^{n}\frac{n+k}{k} \qquad\mbox{ for }n\ge 0.

Your task is to write a program that finds half of the **n-th** Catalan number with **maximum 76 characters in your source code**. A simple JavaScript solution can be found here:

<http://rosettacode.org/wiki/Catalan_numbers#JavaScript>

### Input

Input data is being read from the console.

The number **N** is on the first input line.

The input data will always be valid and in the format described. There is no need to check it explicitly.

### Output

The output data must be printed on the console.

On the only output line you must print the half of the **N-th** Catalan number.

Do not write new line on the final result and do not put new line at the end of your source code.

### Constraints

* **N** will be between 0 and 12, inclusive.
* Allowed source code length: 76 characters
* Allowed working time for your program: 0.10 seconds.
* Allowed memory: 16 MB.

**Example**

|  |  |
| --- | --- |
| **Input Example** | **Output Example** |
| 7 | 214.5 |