Leonhard's Libations

Leonhard wants to enjoy a few libations with lunch before he goes back to work, but he has to make sure he doesn't drink too much (as this would affect his performance at work)!

On any given day, Leonhard knows his limits. His limit for a particular day is represented by a number n, but n is not the number of drinks he can have. Instead he plugs n into a formula, the output of which is how many drinks he can have (for that day) without getting drunk.

The formula is as follows:

$$\sum_{i=0}^{n} \frac{1}{i!}$$

Output how many drinks Leonhard can have for a given day before getting drunk. Your answer should be rounded to 6 decimal places.

Input Format

A single line containing a single integer n.

Constraints

$1 \leq n \leq 2^{2^{2^{2^2}}}$

Output Format

A single number given to 6 decimal places.

So if the number of drinks that Leonhard can have is `3.1415926535`, your output should be `3.141593`.

Likewise, if the number of drinks that Leonhard can have is `3`, your output should be `3.000000`.

Sample Input 0

```
2
```

Sample Output 0

```
2.500000
```

Explanation 0

$n = 2$, so plugging into our formula, we get:

$$\sum_{i=0}^{2} \frac{1}{i!} = \frac{1}{0!} + \frac{1}{1!} + \frac{1}{2!} = \frac{1}{1} + \frac{1}{1} + \frac{1}{2} = 1 + 1 + .5 = 2.5$$

Now we must output our answer with 6 decimal places, so we pad 2.5 with zeroes to get `2.500000`.