Security - Encryption Scheme

Problem Statement

An $encryption\ scheme$ consists of a set $\{E_e : e \in K\}$ and a corresponding set $\{D_d : d \in K\}$ of encrypting and decrypting functions respectively such that for each $e \in K$, there is a unique key $d \in K$ such that $D_d = E_e^{-1}$. An encryption scheme is also referred to as a $cipher$.

It should be clear that every e is actually a representative of some bijection from M to C. In this task you have to count the number of such bijections and hence the number of keys which produce different encryption functions.

Assume that $|M| = |C| = n$ which is given as the input.

Constraints

$1 \leq n \leq 10$

Input Format

Input consists of a single positive integer n.

Output Format

Output a single positive integer, the number of bijections.

Sample Input

```
3
```

Sample Output

```
6
```

Explanation

Here let us assume that $M = \{1, 2, 3\}$ and $C = \{3, 2, 1\}$

We can have encryption schemes such that 1 can be mapped to 3 or 2 or 1, 2 can be mapped to the remaining 2 and 1 can be mapped to the unmapped one.

This accounts for $3 * 2 * 1 = 6$ such encryption functions.